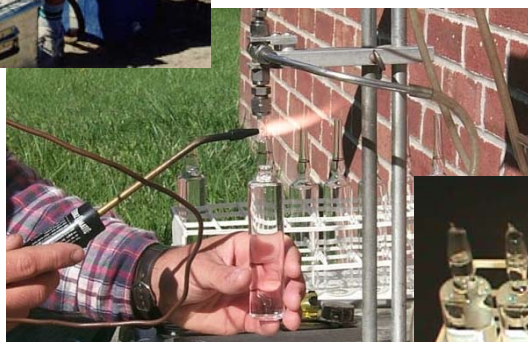




The Stability of Chlorofluorocarbons (CFCs) in Ground-Water Samples Archived in Borosilicate Ampoules

Open-File Report 04-1392



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Cover photos (left to right):

1. U.S. Geological Survey Hydrologist collects a water sample in a borosilicate ampoule
2. Flame-sealing of borosilicate ampoule
3. Set of water samples sealed in borosilicate ampoules

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By Stephanie Dunkle Shapiro, Eurybiades Busenberg, L. Niel Plummer

Open-File Report 2004-1392

**Reston, Virginia
2005**

U.S. Department of the Interior

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Conversion Factors

Multiply	By	To obtain
Cubic centimeters (cm ³)	0.06102	Cubic inch
Gram (g)	0.03527	Ounce
Kilogram (kg)	2.205	Pound
Milligram (mg)	0.001	Gram
Picogram (pg)	1x10 ⁻¹²	Gram
Femtogram (fg)	1x10 ⁻¹⁵	Gram

For temperature, degrees Celsius (°C) can be converted to degrees Fahrenheit (°F) by using the formula $F = (1.8)(^{\circ}\text{C}) + 32$.

Abbreviated units used in report: L (liter), mL (milliliter), kg (kilogram), pg (picogram), mol (mole), μmol (micromole), fmol (femtomol), fg (femtogram), pptv (parts per trillion by volume), mg/L (milligrams per liter), $\mu\text{g/L}$ (micrograms per liter).

Abbreviations and Acronyms

CFC	Chlorofluorocarbon
CFC-11	Trichlorofluoromethane
CFC-12	Dichlorodifluoromethane
CFC-113	1,1,2-trichloro-1,2,2-trifluoroethane
GC-ECD	Gas Chromatograph-Electron Capture Detector
USGS	United States Geological Survey
VOC	Volatile Organic Compound
DOC	Dissolved Organic Carbon
$\mu\text{g/L}$	Micrograms per liter
pg/kg	Picograms per kilogram
³ H	Tritium
³ He	Helium-3

The Stability of Chlorofluorocarbons (CFCs) in Ground-Water Samples Archived in Borosilicate Ampoules

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Abstract

The U.S. Geological Survey (USGS) Chlorofluorocarbon (CFC) Laboratory in Reston, Va., has been measuring concentrations of CFCs in ground-water samples since 1989 to estimate the year that a water sample was recharged to a ground-water flow system. The water samples have been collected in flame-sealed borosilicate ampoules. Typically for each site, three samples were analyzed within days to a few months after collection, and additional samples were archived for extended periods of time (up to four years). The stability of CFC concentrations in the archived water samples from the USGS CFC Laboratory was investigated by analyzing the CFC concentrations in archived water samples and comparing them with the CFC concentrations that were obtained soon after the samples were collected. The archived samples selected for analysis were chosen from sites with a wide variety of hydrogeologic and geochemical conditions. For CFC-11 and CFC-12 concentrations, approximately 14% and 10.5%, respectively, of the archived samples were statistically different (both higher and lower) from the concentrations obtained from analyses conducted soon after the sample collection. Most of the extraneous values were attributed to natural variability of CFC concentrations originally in the water discharged from wells, rather than to microbial degradation within the ampoule on storage.

Introduction

Since 1989, the United States Geological Survey (USGS) Chlorofluorocarbon (CFC) Laboratory in Reston, Virginia, has been measuring concentrations of trichlorofluoromethane (CFC-11) and dichlorodifluoromethane (CFC-12) in ground-water samples from throughout the U.S. Concentrations of 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113) have been measured since 1992. The CFC concentrations have been converted to atmospheric partial pressures and related to historic atmospheric concentrations of CFCs to estimate the year that a given water sample was recharged to a ground-water flow system (Busenberg and Plummer, 1992; Plummer and Busenberg, 2000; Plummer and Friedman, 1999; <http://water.usgs.gov/lab/cfc> (accessed on January 19, 2005)).

Water samples have been collected from over 6,000 field sites, which include a wide range of hydrogeologic, land-use and geochemical conditions. The water samples were collected and flame-sealed in borosilicate ampoules to isolate them from the atmosphere (Busenberg and Plummer, 1992; Plummer and Busenberg, 2000; Plummer and Friedman, 1999; <http://water.usgs.gov/lab/cfc> (accessed on January 19, 2005)). The samples were transported to the USGS CFC Laboratory and stored in a dark location at room temperature (~23°C). They were not refrigerated or acidified. Typically, five or six samples were collected at each sampling location, and three of the samples were analyzed for CFC concentrations using purge-and-trap gas chromatography (GC) with an electron-capture detector (ECD) (Busenberg

and Plummer, 1992; Plummer and Busenberg, 2000; Plummer and Friedman, 1999; <http://water.usgs.gov/lab/cfc> (accessed on January 19, 2005)). The remaining samples were archived, or in the event that there were discrepancies in the CFC concentrations among the first three samples analyzed, additional samples may have been analyzed.

Purpose and Scope

The purpose of this study was to determine whether CFC analyses of ground-water samples after months to years of storage could be used to represent CFC concentrations in the ground-water flow system at the time of sampling. This report describes the results of analyzing CFC-11 and CFC-12 concentrations using GC-ECD for 356 archived ground-water samples stored in borosilicate ampoules to assess the stability of the CFCs in the ampoules during storage. The archived samples were stored up to four years prior to their analysis. The measured CFC concentrations for the archived samples were compared to the concentrations of the CFCs from the samples originally analyzed. CFC-113 analyses were not included due to an interference problem during analysis that occurred from December 1999 through February 2001 when some of the samples were analyzed.

Degradation of CFC Concentrations

In aerobic ground water (typically found in sand aquifers), CFC-11, CFC-12, and CFC-113 concentrations have been shown to be conservative, and under piston-flow conditions, concentrations calculated using the three CFC tracers are generally in agreement (Dunkle and others, 1993; Ekwurzel and others, 1994; Katz and others, 1995; Szabo and others, 1996; Plummer and others, 1998b; Busenberg and Plummer, 2000). Small losses of CFC-11 and CFC-12 were detected in aerobic microcosm experiments with autoclaved sediment and peat (Lovely and Woodward, 1992; Bauer and Yavitt, 1996), but the losses may have been due to sorption (Bauer and Yavitt, 1996). Many aerobic ground-water samples that have infiltrated through soils with organic matter indicate loss of CFC-11 relative to CFC-12

(Lindsey and others, 2003; Plummer and others, 2001). The mechanism of CFC-11 loss in soils is not known.

CFC concentrations have been shown to be nonconservative under anaerobic conditions in a variety of settings. CFCs are electron acceptors, as are nitrate, iron (III), sulfate, and CO₂ in ground water. Under sulfate-reducing conditions, CFC-11 and CFC-113 have been shown to undergo dehalogenation (Sonier and others, 1994; Lesage and others, 1990). Previous investigations have found CFC-11 to be more rapidly degraded than CFC-12 under reducing conditions in termite mounds (Khalil and Rasmussen, 1989), under simulated landfill conditions (Deipser and Stegmann, 1997), in organic-rich soils (Oster et al., 1996; Plummer and others, 2001), and in anaerobic ground-water flow systems (Cook and others, 1995; Dunkle and others, 1993; Goode and others, 1999; Katz and others, 1995; Plummer and others, 1998a&b; and Semprini and others, 1992). Plummer and others (1998b) found good agreement between CFC-11 and CFC-12 concentrations in aerobic ground water from the Upper Floridan aquifer in south Georgia, but CFC-11 and CFC-113 were nearly absent throughout anaerobic (sulfate-reducing and methanogenic) parts of the aquifer that were impacted by seepage of dissolved organic carbon (DOC)-rich river water. CFC-12 persisted in aerobic and anaerobic zones of the Upper Floridan aquifer and apparent CFC-12 ages were within 5 years of apparent ages obtained using tritium (³H) and helium-3 (³He) in seven of nine co-dated samples. Rowe and others (1999) and Shapiro and others (1998) found significant degradation of CFC-11 and CFC-12 under methanogenic conditions, as determined by comparisons to ³H-³He data and modeling, in a buried-valley aquifer near Dayton, Ohio. Using tritium measurements to determine apparent ages, Parks and others (1995) found CFC-11 and CFC-12 completely degraded under methanogenic conditions in the Memphis Sand aquifer near the Mississippi River in southwest Tennessee. Happell and others (2003) found a 50 to 90 percent decrease in concentrations of CFC-11, CFC-12, and CFC-113 in a high-methane interval just below the

ground-water/surface-water interface in Everglades National Park, Florida. Deipser and Stegmann (1997) found that under methanogenic conditions, CFC-11 degradation was nearly 16 times that of CFC-12 and CFC-113. Sulfate (and nitrate) in anaerobic environments slows the rates of dehalogenation reactions by competing with highly halogenated aliphatic compounds as terminal electron acceptors (Mohn and Tiedje, 1992; Sylvestre and others, 1997). Inhibition of dehalogenation by sulfate may explain the persistence of CFC-12 in sulfate-reducing environments (as in Cook and others, 1995; Shapiro and others, 1997; and Plummer and others, 1998a&b) where dissolved sulfate is still present, and more rapid degradation of CFC-12 in methanogenic environments (Deipser and Stegmann, 1997; Happell and others, 2003; Oster and others, 1996) where sulfate concentrations are usually very low.

Field and laboratory observations of CFC degradation in ground-water flow systems raised the question of whether reductive dehalogenation is likely to occur during storage in the flame-sealed borosilicate ampoules for either aerobic or anaerobic ground-water samples. An investigation of degradation of CFCs during storage in ampoules was conducted by Plummer and others (1998b). Plummer and others (1998b) conducted a series of laboratory microcosm experiments using river water with high DOC content and high concentration of suspended sediment. These samples were not representative of ground water, which typically has low DOC content. Ampoules were analyzed at the time of filling and periodically over 2.5 years. Plummer and others (1998b) found that CFC-11 and CFC-113 were completely removed within 400 days in ampoules stored in the dark at room temperature and under refrigerated conditions, due to microbial degradation under anaerobic conditions that developed during dark storage. CFC-12 was stable in the ampoules. Samples stored in the light showed no change in CFC-11, CFC-12, or CFC-113 due to growth of green algae, which likely sustained aerobic conditions (Plummer and others, 1998b). Other than the investigation by Plummer and others (1998b), no specific study had been conducted

on degradation of CFCs in ground-water samples stored in ampoules.

Approach

Water from stored ampoules from 356 sites was analyzed by GC-ECD. The samples were from sites in 19 states, including Hawaii, and are from a wide variety of hydrogeologic environments, including sand and gravel, karst, and fractured rock aquifers; and confined and unconfined aquifers. Depths ranged from near land surface to almost 1,000 feet below land surface. Samples were obtained from recharge and discharge areas of ground-water flow systems. Redox conditions were often known and were noted as either high in dissolved oxygen (concentrations > 0.5 mg/L) or low in dissolved oxygen (concentrations < 0.5 mg/L); or having methane. Methane concentrations were not routinely measured on all CFC samples, but were noted when detected on the basis of dissolved gas samples that were sometimes collected along with CFC samples. Because methane concentrations were not available for all samples and were not used in any quantitative analyses, they are simply presented as a 'detect' when known. CFC concentrations in the water samples ranged from below the detection limit of approximately 0.3 picograms per kilogram of water (pg/kg, 0.3×10^{-12} grams per kilogram, or 0.3 parts per quadrillion) to thousands of pg/kg.

Some variability in the CFC concentrations can be expected from one ampoule to the next for a single sampling event due to the variability in the water withdrawn during pumping (Barcelona and Helfrich, 1986; Gibs and Imbrigiotta, 1990; Busenberg and Plummer, 1992), insufficient purging (Pankow, 1990), or over-purging (Gibs and Imbrigiotta, 1990). Gibs and Imbrigiotta (1990) found that typical purging criteria are not reliable for sampling volatile organic compounds (VOCs) and that over-purging is common because VOCs are not usually distributed uniformly throughout an aquifer, but can be in small plumes of limited vertical and horizontal extent in discrete sections of the aquifer. Although CFCs are classified as VOCs, Gibs and Imbrigiotta (1990) primarily considered VOCs from point sources of

contamination. CFCs in ground water, for the most part, are derived from pervasive atmospheric inputs that are incorporated into ground–water recharge. Nevertheless, spatial variability in aquifer properties can result in a nonuniform distribution of CFCs in an aquifer system.

With the inclusion of the analysis of the archived sample from this investigation and the three ampoules analyzed after the samples were originally collected, each site typically had four ampoules analyzed for CFC concentrations. The results of these four analyses were used to assess changes in the CFC concentrations in the ampoules over time. The method of Dean and Dixon (1951) was used to estimate central values and set confidence limits for data with small numbers of observations. Dean and Dixon (1951) used the Q-test to eliminate questionable observations with 90% confidence for data sets with two to ten observations. The observations were assumed to be independent random samples from a normally distributed population. In this report, the CFC concentrations were assumed to be distributed about a mean value, and questionable values may be the result of degradation or other processes.

Stability of CFCs in Archived Ground-Water Samples

A summary is presented in table 1 of site, laboratory, geochemical, and chlorofluorocarbon data. For CFC-11, 27 of the 356 sampling sites could not be evaluated because the concentrations for all samples from a given site were above the calibration range (1,000 pg/kg) of the instrument. Of the remaining 329 sites, 81 (24.6% of the 329 sites) failed the Q-test for an extraneous value for concentrations from 0 to 925 pg/kg. Of the 81 sites that failed, 62 (76.5% of failed sites) had an extraneous value that was higher than the other values from the site; however, 19 (23.5% of failed sites) had an extraneous value that was lower than the other values from the site. Of the 81 sampling sites that failed the Q-test, the archived sample was the one that failed at 46 (56.8% of failed sites). Fifteen of those archived samples had lower concentrations than the other values from the

site, although 31 of the archived samples had higher concentrations than the other values from the site. Because a larger percentage of sites had an extraneous value that was higher rather than lower than the others from the same site, this indicated that systematic degradation of CFC-11 in the ampoules was not the cause of the variations in CFC concentrations. In addition, of the 15 sites with lower concentrations, 7 had high dissolved oxygen concentrations, 7 had low concentrations of dissolved oxygen and/or methane, and one had an unknown geochemical condition. Because CFC-11 degradation does not occur when dissolved oxygen concentrations are high, the lower CFC-11 values, at least for 7 of the samples, cannot be attributed to degradation.

For CFC-12, 12 of the 356 sites could not be evaluated because the concentrations for all samples from each of these sites were above the calibration range (2,500 pg/kg) of the instrument. Of the 344 sites left to evaluate, 82 (23.8% of the 344 sites) failed the Q-test for an extraneous value for concentrations from 0 to 2,306 pg/kg. Of the 82 sites that failed, 60 (73.2% of failed sites) had an extraneous value that was higher than the other values from the site, and 22 (26.8% of failed sites) had an extraneous value that was lower than the other values from the site. Of the 82 sites that failed the Q-test, 36 (43.9% of failed sites) were the archived sample, and 7 of those had lower concentrations; however, 29 had high concentrations, which eliminated the possibility of any systematic degradation in the ampoules. In addition, of the seven sites with lower concentrations, two had high dissolved oxygen concentrations, four had low concentrations of oxygen and/or methane, and one had an unknown geochemical condition. Because CFC-12 degradation does not occur when dissolved oxygen concentrations are high, the lower CFC-12 values, at least for two of the samples, cannot be attributed to degradation.

Of the 81 and 82 sites that failed the Q-test for CFC-11 and CFC-12, respectively, 21 were the same sample for both CFC-11 and CFC-12. Nineteen had higher concentrations than the other samples from the same site, indicating that the outlier resulted from variability in the CFC

concentrations in ground water during pumping rather than from degradation during storage in the ampoule. Of the two samples that had lower concentrations, only one was from an archived sample. This archived sample also had low dissolved oxygen and degradation in the ampoule could have affected concentrations of CFC-11 and CFC-12. In some cases, a site failed the Q-test for CFC-11 or CFC-12, but not both. However, in some cases, both showed the same trend yet one did not fail by a small margin. In these cases, variations during well purging would likely explain the failure because both compounds showed a similar trend. For example, for site 18, CFC-11 failed the Q-test for the archived sample, but CFC-12 did not, yet both are lower in the archived sample for a site that originally had a high dissolved oxygen concentration. The slightly larger variability in the CFC-12 values for this site caused the archived sample to pass the Q-test.

After eliminating those samples that were considered to be extraneous values with 90% confidence using the Q-test, the samples representing the original analyses were averaged and plotted against the sample that was analyzed specifically for the present investigation and represents the archived sample. The original analyses are those considered most representative for the site from the original sampling; however, these were often analyzed over a significant period of time (days to months) as well, but were averaged for plotting purposes. It should be noted that samples were not analyzed in the field and were often stored for months in the CFC Lab, so there are no representative starting concentrations. The point of the present study was to determine whether CFC concentrations were stable over long periods of time. If the archived sample analyzed for the present investigation was eliminated because it failed the Q-test, then the very first sample (or the average of the first samples if more than one was analyzed originally) was plotted against the sample analyzed at a later time (or the average of samples analyzed at a

later time). The CFC-11 and CFC-12 concentrations in the original analyses and the archived samples are shown in figures 1a and 1b, respectively. Each site is represented by one point that is the average of the original analyses plotted against the analysis for the archived sample. The concentrations are plotted to the calibration limits of 1,000 pg/kg for CFC-11 and 2,500 pg/kg for CFC-12.

In figures 1a and 1b, the data points represented by the '+' symbol are those that are from sites with highly variable analyses. These sites likely never stabilized during sampling and may be affected by mixing of water with variable CFC concentrations. For example, site 296 has a high concentration of dissolved oxygen and has detectable methane, indicating that the sample could be a mixture of relatively old methanogenic water and relatively young oxygenated water. The majority of the variable sites were from fractured-rock aquifers, as might be expected; however, it should be noted that the hydrogeologic environment was not known for all sites included in this investigation, so no statistical evaluation was possible. Examples of selected sites that either never stabilized during sampling, showing purging trends with concentrations increasing or decreasing over time, or were drawing water with variable concentrations of CFCs are shown in table 2. With the exception of a few of the more variable sites identified on figures 1a and 1b the remaining sites appear to have maintained relatively stable concentrations of CFC-11 and CFC-12 over the storage period.

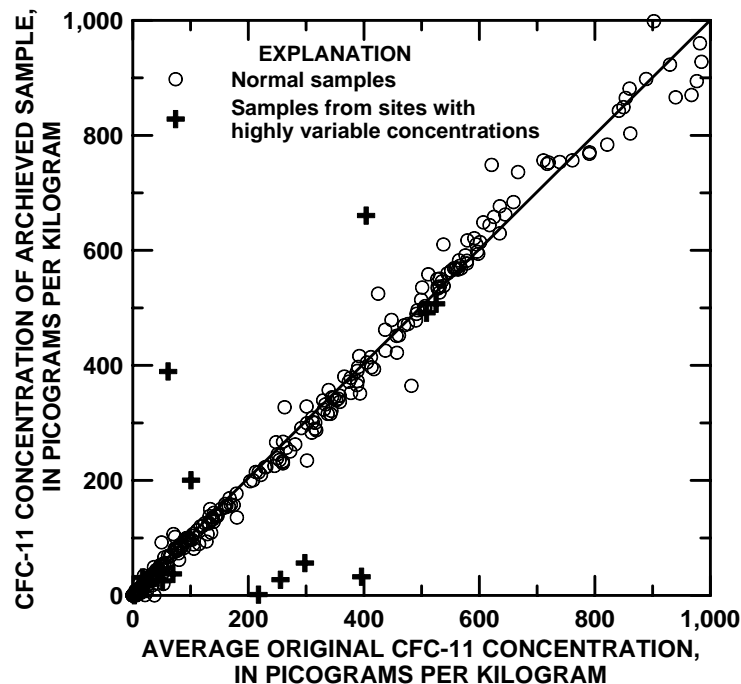


Figure 1a. Comparison of original analyses of CFC-11 to analysis of CFC-11 in archived sample. The concentrations are shown only for samples that plot within the calibration limit of 0 to 1000 pg/kg for CFC-11. The data points represented by the '+' symbol are those that are from sites with highly variable analyses.

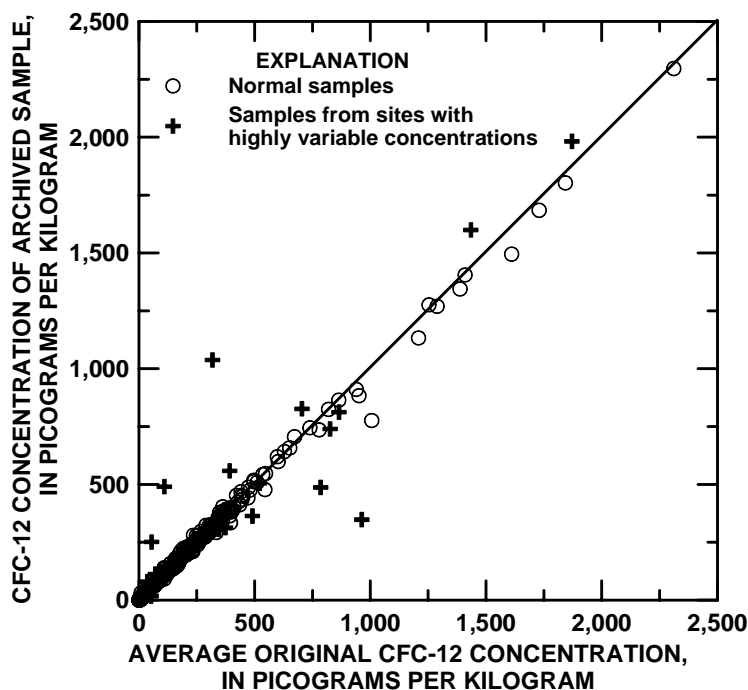


Figure 1b. Comparison of original analyses of CFC-12 to analysis of CFC-12 in archived sample. The concentrations are shown only for samples that plot within the calibration range of 0 to 2,500 pg/kg for CFC-12. The data points represented by the '+' symbol are those that are from sites with highly variable analyses.

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data

[GC, gas chromatograph used for analysis; H, dissolved oxygen greater than 0.5 mg/L; L, dissolved oxygen less than 0.5 mg/L; M, methane present; CFC-11, trichloromonofluoromethane; CFC-12, dichlorodifluoromethane; pg/kg, picograms per kilogram; Q, (x1-x2)/w where x1 is a value in question, x2 is the next closest value, and w is the range of all values; NA, not available; GCR, greater than calibration range, 1000 pg/kg for CFC-11, 2500 pg/kg for CFC-12; ERR, analytical error]

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average	CFC-12	Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
1	VA	5	12-Apr-99	11-Jun-99	60	H	GCR					252.7	255.0	254.6	0.3	
1	VA	2	12-Apr-99	20-Oct-99	191	H	GCR					256.4				
1	VA	4	12-Apr-99	20-Oct-99	191	H	GCR					252.7				
1	VA	3	12-Apr-99	15-Feb-01	675	H	GCR					258.1				
2	VA	5	12-Apr-99	11-Jun-99	60	H	GCR					209.9	223.6	216.0	0.8	213.9
2	VA	2	12-Apr-99	20-Oct-99	191	H	GCR					218.6				
2	VA	4	12-Apr-99	21-Oct-99	192	H	GCR					252.4				
2	VA	3	12-Apr-99	15-Feb-01	675	H	GCR					213.3				
3	VA	5	14-Apr-99	11-Jun-99	58	H	117.7	242.5	123.0	1.0	121.2	102.3	143.5	117.7	0.8	112.5
3	VA	2	14-Apr-99	25-Oct-99	194	H	124.9					112.6				
3	VA	4	14-Apr-99	25-Oct-99	194	H	606.4					236.2				
3	VA	3	14-Apr-99	15-Feb-01	673	H	121.1					122.7				
4	VA	2	15-Apr-99	25-Oct-99	193	NA	250.5	277.9	245.4	0.9	238.6	149.4	165.8	156.6	0.8	154.2
4	VA	3	15-Apr-99	25-Oct-99	193	NA	395.7					200.7				
4	VA	4	15-Apr-99	26-Oct-99	194	NA	240.2					153.0				
4	VA	1	15-Apr-99	8-Mar-01	693	NA	225.1					160.2				
5	VA	5	14-Apr-99	11-Jun-99	58	H	548.5	562.1	565.4	0.7		289.0	294.2	292.6	0.7	
5	VA	2	14-Apr-99	25-Oct-99	194	H	562.2					296.1				
5	VA	4	14-Apr-99	25-Oct-99	194	H	568.5					296.9				
5	VA	3	14-Apr-99	15-Feb-01	673	H	569.0					294.9				
6	VA	5	14-Apr-99	11-Jun-99	58	H	278.3	307.9	312.3	0.6		160.6	159.9	158.7	0.5	
6	VA	2	14-Apr-99	25-Oct-99	194	H	315.4					156.7				
6	VA	4	14-Apr-99	25-Oct-99	194	H	309.2					152.1				
6	VA	6	9-Nov-98	7-Mar-01	849	H	328.6					170.2				
7	PA	2	10-May-99	10-Jun-99	31	L	275.9	410.9	259.5	0.9	250.7	203.5	220.5	200.9	0.8	196.0
7	PA	4	10-May-99	1-Nov-99	175	L	891.4					293.8				
7	PA	5	10-May-99	1-Nov-99	175	L	243.1					186.2				
7	PA	1	10-May-99	5-Mar-01	665	L	233.0					198.3				
8	PA	2	10-May-99	11-Jun-99	32	M	16.3	11.7	13.0	0.6		52.4	28.7	25.4	0.6	
8	PA	4	10-May-99	2-Nov-99	176	M	11.5					11.5				
8	PA	5	10-May-99	2-Nov-99	176	M	14.5					22.6				
8	PA	3	10-May-99	5-Mar-01	665	M	4.6					28.2				
9	PA	2	17-Jun-98	22-Oct-98	127	NA	16.5	75.5	90.4	0.7		29.7	54.1	60.4	0.8	62.3
9	PA	4	10-May-99	2-Nov-99	176	NA	104.8					66.1				
9	PA	5	10-May-99	2-Nov-99	176	NA	98.9					62.1				
9	PA	3	10-May-99	5-Mar-01	665	NA	81.8					58.6				
10	PA	2	11-May-99	11-Jun-99	31	H	324.7	313.9	311.0	0.8	310.3	216.3	224.0	222.5	0.4	
10	PA	4	11-May-99	2-Nov-99	175	H	309.6					228.7				
10	PA	5	11-May-99	2-Nov-99	175	H	312.3					240.9				
10	PA	3	11-May-99	5-Mar-01	664	H	309.0					210.1				
11	PA	2	11-May-99	11-Jun-99	31	H,M	318.6	309.0	308.0	0.5		218.2	227.7	228.9	0.2	
11	PA	4	11-May-99	2-Nov-99	175	H,M	306.7					239.6				
11	PA	5	11-May-99	2-Nov-99	175	H,M	309.2					243.0				
11	PA	3	11-May-99	5-Mar-01	664	H,M	301.5					210.0				
12	PA	2	11-May-99	11-Jun-99	31	H,M	260.9	249.7	247.8	0.6		177.9	188.6	186.4	0.4	
12	PA	4	11-May-99	2-Nov-99	175	H,M	242.1					194.9				
12	PA	5	11-May-99	2-Nov-99	175	H,M	250.2					205.3				
12	PA	3	11-May-99	5-Mar-01	664	H,M	245.4					176.2				
13	PA	2	11-May-99	11-Jun-99	31	H	159.5	144.4	152.9	0.8	155.1	131.6	138.7	135.4	0.8	134.1
13	PA	4	11-May-99	3-Nov-99	176	H	154.1					136.1				
13	PA	5	11-May-99	3-Nov-99	176	H	151.6					134.7				
13	PA	3	11-May-99	6-Mar-01	665	H	112.5					152.3				
14	PA	2	11-May-99	11-Jun-99	31	H,M	140.7	142.4	142.0	0.5		111.6	118.8	115.3	0.8	114.1
14	PA	4	11-May-99	3-Nov-99	176	H,M	147.3					116.7				
14	PA	5	11-May-99	3-Nov-99	176	H,M	143.2					113.9				
14	PA	3	11-May-99	5-Mar-01	664	H,M	138.5					133.0				
15	PA	2	16-Jun-98	22-Oct-98	128	H	335.6	329.0	329.3	0.1		202.4	206.2	205.9	0.2	
15	PA	4	16-Jun-98	22-Oct-98	128	H	335.5					202.7				
15	PA	5	16-Jun-98	30-Oct-98	136	H	321.8					209.1				
15	PA	3	16-Jun-98	6-Mar-01	994	H	323.1					210.7				
16	PA	2	17-Jun-98	29-Oct-98	134	H	351.4	332.1	329.1	0.4		225.4	213.9	212.7	0.4	
16	PA	4	17-Jun-98	29-Oct-98	134	H	319.0					208.2				
16	PA	5	17-Jun-98	30-Oct-98	135	H	318.8					204.7				
16	PA	3	17-Jun-98	6-Mar-01	993	H	339.1					217.2				
17	PA	2	16-Jun-98	22-Oct-98	128	H,M	206.3	206.2	207.0	0.6		145.7	151.9	150.3	0.7	
17	PA	3	16-Jun-98	22-Oct-98	128	H,M	210.8					150.1				
17	PA	5	16-Jun-98	30-Oct-98	136	H,M	207.6					161.2				
17	PA	1	16-Jun-98	6-Mar-01	994	H,M	200.2					150.5				
18	PA	2	17-Jun-98	29-Oct-98	134	H	109.7	96.4	111.6	0.9	112.4	102.7	104.9	107.4	0.5	
18	PA	4	17-Jun-98	29-Oct-98	134	H	114.0					113.8				
18	PA	5	17-Jun-98	30-Oct-98	135	H	113.4					112.0				
18	PA	3	17-Jun-98	6-Mar-01	993	H	48.4					91.0				
19	PA	2	18-Jun-98	29-Oct-98	133	H	70.8	74.0	73.0	0.5		73.5	75.3	74.2	0.8	73.9

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	Time in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
19	PA	4	18-Jun-98	29-Oct-98	133	H	71.1						73.8			
19	PA	5	18-Jun-98	30-Oct-98	134	H	74.8						74.5			
19	PA	3	18-Jun-98	6-Mar-01	992	H	79.2						79.2			
20	PA	2	12-May-99	10-Jun-99	29	H	535.0	624.9	545.9	1.0	542.2		295.5	300.2	300.3	0.4
20	PA	4	12-May-99	29-Oct-99	170	H	544.0						299.0			
20	PA	5	12-May-99	29-Oct-99	170	H	547.7						304.6			
20	PA	3	12-May-99	6-Mar-01	664	H	872.7						301.5			
21	PA	2	12-May-99	11-Jun-99	30	H	352.2	353.1	356.6	0.6			190.2	195.0	194.8	0.4
21	PA	4	12-May-99	3-Nov-99	175	H	361.0						195.7			
21	PA	5	12-May-99	3-Nov-99	175	H	362.7						200.1			
21	PA	3	12-May-99	6-Mar-01	664	H	336.6						193.9			
22	PA	2	16-Jun-98	22-Oct-98	128	H	543.5	536.2	534.6	0.3			322.9	309.5	307.0	0.6
22	PA	4	16-Jun-98	22-Oct-98	128	H	524.7						303.7			
22	PA	5	16-Jun-98	30-Oct-98	136	H	525.6						301.0			
22	PA	3	16-Jun-98	6-Mar-01	994	H	550.8						310.2			
23	PA	2	17-Jun-98	22-Oct-98	127	H	580.1	573.1	578.4	0.8	579.6		292.0	291.6	294.1	0.7
23	PA	4	17-Jun-98	22-Oct-98	127	H	576.7						281.2			
23	PA	5	17-Jun-98	30-Oct-98	135	H	553.5						296.8			
23	PA	3	17-Jun-98	6-Mar-01	993	H	581.9						296.2			
24	PA	1	17-Jun-98	22-Oct-98	127	H,M	383.7	477.3	389.0	0.9	383.5		192.1	223.3	205.5	0.8
24	PA	3	17-Jun-98	22-Oct-98	127	H,M	394.3						200.6			
24	PA	2	17-Jun-98	30-Oct-98	135	H,M	758.6						290.3			
24	PA	4	17-Jun-98	6-Mar-01	993	H,M	372.6						210.3			
25	PA	2	12-May-99	10-Jun-99	29	H	638.7	633.6	628.8	0.5			349.5	339.8	336.8	0.9
25	PA	4	12-May-99	1-Nov-99	173	H	618.8						336.5			
25	PA	5	12-May-99	1-Nov-99	173	H	618.5						337.0			
25	PA	3	12-May-99	6-Mar-01	664	H	658.3						336.1			
26	PA	2	12-May-99	10-Jun-99	29	H	650.5	645.7	639.2	0.5			360.1	354.1	355.3	0.5
26	PA	4	12-May-99	1-Nov-99	173	H	627.7						352.9			
26	PA	5	12-May-99	1-Nov-99	173	H	627.9						345.7			
26	PA	3	12-May-99	6-Mar-01	664	H	676.7						357.7			
27	PA	2	3-May-99	8-Jun-99	36	L	264.4	252.3	257.7	0.7			319.4	315.4	315.3	0.3
27	PA	4	3-May-99	8-Jun-99	36	L	260.1						305.1			
27	PA	5	3-May-99	27-Oct-99	177	L	255.2						326.1			
27	PA	3	3-May-99	7-Mar-01	674	L	229.5						311.1			
28	PA	2	3-May-99	8-Jun-99	36	H	GCR						339.8	366.1		0.7
28	PA	4	3-May-99	8-Jun-99	36	H	GCR						386.4			
28	PA	5	3-May-99	27-Oct-99	177	H	GCR						372.1			
29	PA	2	3-May-99	8-Jun-99	36	L	336.2	284.9	284.4	0.4			370.3	323.3	315.4	0.6
29	PA	4	3-May-99	8-Jun-99	36	L	293.1						304.4			
29	PA	5	3-May-99	27-Oct-99	177	L	275.7						326.4			
29	PA	3	3-May-99	7-Mar-01	674	L	234.5						291.9			
30	PA	2	4-May-99	9-Jun-99	36	H,M	25.4	22.4	22.4	0.1			45.2	44.5	44.1	0.5
30	PA	4	4-May-99	9-Jun-99	36	H,M	19.0						38.4			
30	PA	5	4-May-99	28-Oct-99	177	H,M	19.3						42.9			
30	PA	3	4-May-99	7-Mar-01	673	H,M	25.9						51.3			
31	PA	2	4-May-99	9-Jun-99	36	H	297.0	252.7	251.9	0.4			185.6	166.2	166.4	0.2
31	PA	4	4-May-99	28-Oct-99	177	H	237.2						154.7			
31	PA	5	4-May-99	28-Oct-99	177	H	210.1						146.6			
31	PA	3	4-May-99	7-Mar-01	673	H	266.5						178.0			
32	PA	2	5-May-99	9-Jun-99	35	L,M	0.6	0.2	0.0	1.0	0.0		21.9	19.1	18.9	0.3
32	PA	4	5-May-99	28-Oct-99	176	L,M	0.0						17.4			
32	PA	5	5-May-99	28-Oct-99	176	L,M	0.0						20.4			
32	PA	3	5-May-99	7-Mar-01	672	L,M	0.0						16.7			
33	PA	2	5-May-99	9-Jun-99	35	L,M	3.7	0.9	0.0	1.0	0.0		19.4	22.0	20.9	0.6
33	PA	4	5-May-99	28-Oct-99	176	L,M	0.0						16.2			
33	PA	5	5-May-99	28-Oct-99	176	L,M	0.0						30.0			
33	PA	3	5-May-99	7-Mar-01	672	L,M	0.0						22.4			
34	PA	2	3-May-99	8-Jun-99	36	L,M	543.2	468.0	457.8	0.3			377.7	358.8	345.4	0.5
34	PA	3	3-May-99	8-Jun-99	36	L,M	296.0						309.1			
34	PA	5	3-May-99	28-Oct-99	178	L,M	372.3						435.2			
34	PA	1	3-May-99	7-Mar-01	674	L,M	660.5						313.0			
35	PA	2	4-May-99	8-Jun-99	35	NA	455.4	448.4	453.4	0.7			426.6	442.7	442.0	0.3
35	PA	4	4-May-99	8-Jun-99	35	NA	464.7						449.3			
35	PA	5	4-May-99	28-Oct-99	177	NA	451.3						460.2			
35	PA	3	4-May-99	7-Mar-01	673	NA	422.0						434.6			
36	PA	2	5-May-99	9-Jun-99	35	NA	GCR						525.2	616.0	490.6	0.8
36	PA	4	5-May-99	28-Oct-99	176	NA	GCR						455.9			
36	PA	5	5-May-99	28-Oct-99	176	NA	GCR						1119.7			
36	PA	3	5-May-99	8-Mar-01	673	NA	GCR						363.1			
37	PA	2	5-May-99	9-Jun-99	35	H	GCR						540.8	547.1	547.7	0.5
37	PA	4	15-May-99	28-Oct-99	166	H	GCR						552.1			
37	PA	5	15-May-99	28-Oct-99	166	H	GCR						548.7			
37	PA	3	5-May-99	7-Mar-01	672	H	GCR						546.7			
38	PA	2	4-May-99	9-Jun-99	36	H	795.6	784.9	788.0	0.7			440.5	438.8	440.1	0.7
38	PA	4	4-May-99	28-Oct-99	177	H	786.6						443.5			
38	PA	5	4-May-99	28-Oct-99	177	H	789.3						439.7			
38	PA	3	4-May-99	7-Mar-01	673	H	767.9						431.6			

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	Time in Days	Code	pg/kg	CFC-11 pg/kg	CFC-11 pg/kg	Q	CFC-11 pg/kg	CFC-12 pg/kg	CFC-12 pg/kg	CFC-12 pg/kg	Q	CFC-12 pg/kg
39	PA	2	4-May-99	8-Jun-99	35	H	GCR					736.5	749.6	742.6	0.8	740.6
39	PA	4	4-May-99	9-Jun-99	36	H	GCR					740.8				
39	PA	5	4-May-99	28-Oct-99	177	H	GCR					744.4				
39	PA	3	4-May-99	7-Mar-01	673	H	GCR					776.7				
40	PA	2	14-May-99	9-Jun-99	26	H	87.9	85.7	86.3	0.4		90.7	89.8	89.5	0.4	
40	PA	4	14-May-99	29-Oct-99	168	H	84.6					88.2				
40	PA	5	14-May-99	29-Oct-99	168	H	80.4					87.6				
40	PA	3	14-May-99	5-Mar-01	661	H	90.0					92.6				
41	PA	2	14-May-99	9-Jun-99	26	L	95.3	90.0	90.3	0.4		79.6	76.1	76.7	0.3	
41	PA	4	14-May-99	29-Oct-99	168	L	84.2					73.7				
41	PA	5	14-May-99	29-Oct-99	168	L	88.8					71.3				
41	PA	3	14-May-99	5-Mar-01	661	L	91.8					79.6				
42	PA	2	14-May-99	9-Jun-99	26	H	110.8	105.1	105.5	0.5		77.7	74.6	74.4	0.2	
42	PA	4	14-May-99	29-Oct-99	168	H	98.4					71.9				
42	PA	5	14-May-99	29-Oct-99	168	H	104.2					72.0				
42	PA	3	14-May-99	5-Mar-01	661	H	106.8					76.8				
43	PA	3	14-May-99	9-Jun-99	26	L	79.1	68.3	74.5	0.6		33.0	33.3	32.8	0.6	
43	PA	4	14-May-99	29-Oct-99	168	L	69.9					32.6				
43	PA	5	14-May-99	29-Oct-99	168	L	62.1					28.6				
43	PA	1	14-May-99	5-Mar-01	661	L	106.7					38.9				
44	PA	2	12-May-99	10-Jun-99	29	H	494.0	504.2	504.7	0.2		283.2	284.1	283.6	0.7	
44	PA	4	12-May-99	29-Oct-99	170	H	510.8					284.0				
44	PA	5	12-May-99	29-Oct-99	170	H	513.5					286.3				
44	PA	3	12-May-99	5-Mar-01	663	H	498.5					282.9				
45	PA	2	12-May-99	10-Jun-99	29	H	156.5	159.9	160.6	0.5		128.7	135.9	133.8	0.5	
45	PA	4	12-May-99	29-Oct-99	170	H	162.1					130.0				
45	PA	5	12-May-99	29-Oct-99	170	H	162.0					147.4				
45	PA	3	12-May-99	6-Mar-01	664	H	159.1					137.5				
46	PA	2	12-May-99	10-Jun-99	29	H	83.1	82.6	81.8	0.5		83.0	85.1	85.3	0.2	
46	PA	4	12-May-99	29-Oct-99	170	H	80.4					81.6				
46	PA	5	12-May-99	29-Oct-99	170	H	79.8					87.5				
46	PA	3	12-May-99	5-Mar-01	663	H	87.1					88.3				
47	PA	2	13-May-99	10-Jun-99	28	H	218.5	218.9	220.9	0.6		137.1	132.1	131.7	0.2	
47	PA	4	13-May-99	29-Oct-99	169	H	224.1					128.5				
47	PA	5	13-May-99	29-Oct-99	169	H	223.3					127.8				
47	PA	3	13-May-99	5-Mar-01	662	H	209.5					134.9				
48	PA	2	13-May-99	9-Jun-99	27	L	191.6	169.1	174.7	0.6		122.3	117.7	119.1	0.5	
48	PA	4	13-May-99	29-Oct-99	169	L	170.8					116.0				
48	PA	5	13-May-99	29-Oct-99	169	L	178.5					122.2				
48	PA	3	13-May-99	5-Mar-01	662	L	135.5					110.4				
49	PA	2	13-May-99	10-Jun-99	28	L	91.0	92.0	91.4	0.6		119.6	118.0	118.1	0.3	
49	PA	3	13-May-99	1-Nov-99	172	L	91.8					122.5				
49	PA	5	13-May-99	1-Nov-99	172	L	88.8					113.5				
49	PA	1	13-May-99	5-Mar-01	662	L	96.4					116.5				
50	PA	2	13-May-99	11-Jun-99	29	L	123.9	119.2	120.1	0.5		89.8	100.6	91.2	0.9	90.7
50	PA	4	13-May-99	3-Nov-99	174	L	142.7					92.4				
50	PA	5	13-May-99	3-Nov-99	174	L	116.3					90.0				
50	PA	3	13-May-99	6-Mar-01	663	L	93.7					130.0				
51	PA	2	13-May-99	10-Jun-99	28	H	605.9	624.2	623.5	0.5		350.4	350.4	348.0	0.6	
51	PA	4	13-May-99	29-Oct-99	169	H	622.8					343.1				
51	PA	5	13-May-99	29-Oct-99	169	H	624.2					345.5				
51	PA	3	13-May-99	5-Mar-01	662	H	644.0					362.4				
52	PA	2	13-May-99	10-Jun-99	28	H	694.1	653.1	664.9	0.5		387.8	379.8	381.9	0.5	
52	PA	4	13-May-99	1-Nov-99	172	H	635.7					375.9				
52	PA	5	13-May-99	1-Nov-99	172	H	533.8					421.6				
52	PA	3	13-May-99	6-Mar-01	663	H	748.6					333.8				
53	MD	2	23-Sep-98	11-Mar-99	169	L,M	0.4	0.7	0.4	0.8	0.3	8.5	12.0	11.9	0.5	
53	MD	4	23-Sep-98	18-Mar-99	176	L,M	1.8					15.8				
53	MD	5	23-Sep-98	22-Mar-99	180	L,M	0.4					11.5				
53	MD	3	23-Sep-98	7-Mar-01	896	L,M	0.0					12.2				
54	MD	2	23-Sep-98	19-Mar-99	177	L,M	0.0	0.2	0.0	1.0	0.0	0.0	0.0	0.0	0.0	
54	MD	4	23-Sep-98	19-Mar-99	177	L,M	0.0					0.0				
54	MD	5	23-Sep-98	22-Mar-99	180	L,M	0.0					0.0				
54	MD	3	23-Sep-98	8-Mar-01	897	L,M	0.6					0.0				
55	MD	2	24-Sep-98	11-Mar-99	168	L,M	487.5	523.2	523.6	0.3		331.9	323.4	320.8	0.4	
55	MD	4	24-Sep-98	11-Mar-99	168	L,M	511.1					292.6				
55	MD	6	24-Sep-98	19-Mar-99	176	L,M	536.0					359.6				
55	MD	3	24-Sep-98	7-Mar-01	895	L,M	558.3					309.6				
56	MD	2	24-Sep-98	19-Mar-99	176	L,M	170.9	163.8	166.5	0.6		279.2	290.4	291.2	0.4	
56	MD	5	24-Sep-98	22-Mar-99	179	L,M	168.9					299.9				
56	MD	4	24-Sep-98	8-Mar-01	896	L,M	164.0					287.3				
56	MD	3	24-Sep-98	8-Mar-01	896	L,M	151.3					295.0				
57	CO	2	26-Aug-98	8-Dec-98	104	H	720.4	785.7	794.6	0.4		407.9	438.9	448.2	0.9	449.2
57	CO	4	26-Aug-98	8-Dec-98	104	H	818.5					451.3				
57	CO	5	26-Aug-98	7-Jan-99	134	H	833.4					447.2				
57	CO	3	26-Aug-98	8-Mar-01	925	H	770.6					449.2				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
58	CO	2	27-Aug-98	8-Dec-98	103	H	592.5	611.8	598.6	0.8	596.6	302.9	312.0	308.4	0.7	
58	CO	4	27-Aug-98	8-Dec-98	103	H	603.2					307.0				
58	CO	5	27-Aug-98	7-Jan-99	133	H	594.0					328.2				
58	CO	3	27-Aug-98	9-Mar-01	925	H	657.4					309.7				
59	CO	2	21-Aug-98	14-Dec-98	115	L	355.2	344.9	349.6	0.6		1243.8	1259.2	1259.8	0.3	
59	CO	4	21-Aug-98	14-Dec-98	115	L	354.7					1293.8				
59	CO	5	21-Aug-98	6-Jan-99	138	L	325.0					1223.3				
59	CO	0	21-Aug-98	9-Mar-01	931	L	344.5					1275.8				
60	CO	2	26-Aug-98	8-Dec-98	104	H	558.9	577.6	566.7	0.9	564.1	227.3	231.9	230.1	0.6	
60	CO	4	26-Aug-98	8-Dec-98	104	H	566.7					232.8				
60	CO	3	26-Aug-98	7-Jan-99	134	H	566.6					225.4				
60	CO	1	26-Aug-98	9-Mar-01	926	H	618.1					241.9				
61	CO	2	24-Aug-98	14-Dec-98	112	L	558.4	584.6	573.3	0.8	568.3	1812.7	1899.1	1900.7	0.3	
61	CO	4	24-Aug-98	14-Dec-98	112	L	573.6					1936.9				
61	CO	5	24-Aug-98	7-Jan-99	136	L	573.0					1864.4				
61	CO	3	24-Aug-98	9-Mar-01	928	L	633.2					1982.3				
62	CO	3	17-Aug-98	8-Dec-98	113	L	92.8	92.1	92.7	0.7		139.1	134.1	137.4	0.6	
62	CO	4	17-Aug-98	8-Dec-98	113	L	92.5					147.6				
62	CO	5	17-Aug-98	7-Jan-99	143	L	89.2					114.0				
62	CO	1	17-Aug-98	9-Mar-01	935	L	93.8					135.6				
63	CO	3	24-Aug-98	14-Dec-98	112	H	410.2	412.7	413.1	0.5		217.2	217.9	217.7	0.5	
63	CO	4	24-Aug-98	14-Dec-98	112	H	413.8					218.2				
63	CO	5	24-Aug-98	7-Jan-99	136	H	412.3					208.8				
63	CO	1	24-Aug-98	9-Mar-01	928	H	414.3					227.3				
64	CO	2	19-Aug-98	8-Dec-98	111	L	74.6	77.3	76.2	0.7		71.6	65.5	64.9	0.3	
64	CO	4	19-Aug-98	8-Dec-98	111	L	75.7					60.5				
64	CO	5	19-Aug-98	7-Jan-99	141	L	76.7					68.3				
64	CO	3	19-Aug-98	8-Mar-01	932	L	82.1					61.5				
65	CO	2	19-Aug-98	8-Dec-98	111	L	230.1	227.4	228.3	0.5		162.5	160.7	162.2	0.9	162.4
65	CO	4	19-Aug-98	8-Dec-98	111	L	229.9					161.9				
65	CO	5	19-Aug-98	7-Jan-99	141	L	226.7					155.6				
65	CO	0	19-Aug-98	9-Mar-01	933	L	222.7					162.9				
66	CO	2	18-Aug-98	15-Dec-98	119	H	168.2	167.9	167.9	0.4		114.4	117.1	115.1	0.6	
66	CO	4	18-Aug-98	15-Dec-98	119	H	167.0					115.7				
66	CO	3	18-Aug-98	6-Jan-99	141	H	167.6					104.5				
66	CO	1	18-Aug-98	9-Mar-01	934	H	168.9					133.6				
67	CO	2	20-Aug-98	15-Dec-98	117	H	93.3	94.5	94.4	0.4		69.7	73.3	73.1	0.2	
67	CO	4	20-Aug-98	15-Dec-98	117	H	95.4					76.5				
67	CO	5	20-Aug-98	6-Jan-99	139	H	89.7					69.2				
67	CO	3	20-Aug-98	8-Mar-01	931	H	99.7					77.9				
68	CO	2	20-Aug-98	15-Dec-98	117	H	454.5	455.6	455.5	0.5		194.1	192.6	191.9	0.4	
68	CO	4	20-Aug-98	15-Dec-98	117	H	456.4					189.7				
68	CO	5	20-Aug-98	6-Jan-99	139	H	432.5					186.0				
68	CO	3	20-Aug-98	8-Mar-01	931	H	479.1					200.7				
69	CO	2	25-Aug-98	8-Dec-98	105	L	73.3	76.7	76.4	0.5		29.8	28.9	29.6	0.8	29.8
69	CO	4	25-Aug-98	8-Dec-98	105	L	77.3					29.4				
69	CO	5	25-Aug-98	7-Jan-99	135	L	75.4					25.9				
69	CO	3	25-Aug-98	9-Mar-01	927	L	80.9					30.3				
70	CO	2	27-Aug-98	15-Dec-98	110	H	578.1	608.0		1.0	577.7	417.3	431.8		0.8	
70	CO	4	27-Aug-98	15-Dec-98	110	H	577.3					425.5				
70	CO	3	27-Aug-98	8-Mar-01	924	H	668.6					452.5				
71	CO	2	25-Aug-98	14-Dec-98	111	H	126.6	123.8	127.6	0.7		GCR				
71	CO	4	25-Aug-98	14-Dec-98	111	H	133.5					GCR				
71	CO	5	25-Aug-98	7-Jan-99	135	H	128.5					GCR				
71	CO	3	25-Aug-98	9-Mar-01	927	H	106.7					GCR				
72	CO	2	20-Aug-98	14-Dec-98	116	L	365.9	343.7	350.0	0.6		GCR				
72	CO	4	20-Aug-98	14-Dec-98	116	L	342.8					GCR				
72	CO	5	20-Aug-98	6-Jan-99	139	L	308.9					GCR				
72	CO	1	20-Aug-98	9-Mar-01	932	L	357.1					GCR				
73	CO	2	26-Aug-98	15-Dec-98	111	L	394.9	392.1	392.5	0.4		231.4	225.0	225.6	0.5	
73	CO	4	26-Aug-98	15-Dec-98	111	L	390.0					224.3				
73	CO	5	26-Aug-98	6-Jan-99	133	L	386.1					217.5				
73	CO	3	26-Aug-98	9-Mar-01	926	L	397.2					226.9				
74	PA	2	16-Oct-97	15-Apr-98	181	H	525.8	555.9	543.7	0.7		255.7	258.6	257.5	0.5	
74	PA	4	16-Oct-97	15-Apr-98	181	H	533.2					259.2				
74	PA	5	16-Oct-97	20-Apr-98	186	H	554.1					253.5				
74	PA	0	16-Oct-97	19-Mar-01	1250	H	610.4					265.8				
75	PA	2	16-Sep-97	13-Apr-98	209	L,M	78.7	80.4	75.2	0.7		88.6	87.4	86.2	0.5	
75	PA	4	16-Sep-97	13-Apr-98	209	L,M	69.5					78.9				
75	PA	5	16-Sep-97	14-Apr-98	210	L,M	71.7					83.7				
75	PA	0	16-Sep-97	19-Mar-01	1280	L,M	101.8					98.3				
76	WV	2	8-Oct-97	16-Apr-98	190	L,M	3.6	4.7	4.7	0.4		GCR				
76	WV	4	8-Oct-97	16-Apr-98	190	L,M	4.4					GCR				
76	WV	5	8-Oct-97	20-Apr-98	194	L,M	4.9					GCR				
76	WV	0	8-Oct-97	23-Mar-01	1262	L,M	5.7					GCR				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
77	WV	2	24-Sep-97	15-Apr-98	203	H	438.9	443.2	439.9	0.7		569.5	516.8	508.4	0.7	
77	WV	4	24-Sep-97	15-Apr-98	203	H	440.8					511.8				
77	WV	5	24-Sep-97	20-Apr-98	208	H	430.8					481.0				
77	WV	0	24-Sep-97	19-Mar-01	1272	H	462.1					504.9				
78	WV	2	23-Sep-97	15-Apr-98	204	H	99.8	103.6	102.2	0.6		442.0	433.4	406.9	0.6	
78	WV	4	23-Sep-97	15-Apr-98	204	H	100.8					361.7				
78	WV	5	23-Sep-97	20-Apr-98	209	H	110.3					371.8				
78	WV	0	23-Sep-97	23-Mar-01	1277	H	103.6					558.2				
79	PA	2	3-Sep-97	13-Apr-98	222	L	0.0	0.2	0.0	1.0	0.0	0.0	0.5		1.0	0.0
79	PA	4	3-Sep-97	13-Apr-98	222	L	0.0					0.0				
79	PA	5	3-Sep-97	14-Apr-98	223	L	0.0					1.4				
79	PA	0	3-Sep-97	19-Mar-01	1293	L	0.6					ERR				
80	WV	2	20-Oct-97	16-Apr-98	178	L	131.1	107.1	134.0	0.9	139.4	63.0	66.2	64.8	0.7	
80	WV	4	20-Oct-97	16-Apr-98	178	L	136.9					72.2				
80	WV	5	20-Oct-97	20-Apr-98	182	L	150.1					65.9				
80	WV	0	20-Oct-97	19-Mar-01	1246	L	10.2					63.7				
81	PA	2	1-Oct-97	15-Apr-98	196	H	97.7	110.8	98.9	0.9	96.5	91.7	91.2	91.0	0.4	
81	PA	4	1-Oct-97	15-Apr-98	196	H	91.8					89.6				
81	PA	5	1-Oct-97	16-Apr-98	197	H	153.8					90.2				
81	PA	0	1-Oct-97	19-Mar-01	1265	H	100.0					93.1				
82	WV	2	21-Oct-97	16-Apr-98	177	L	52.2	61.4	63.7	0.3		40.8	51.1	53.6	0.7	
82	WV	4	21-Oct-97	16-Apr-98	177	L	81.0					56.4				
82	WV	3	21-Oct-97	20-Apr-98	181	L	75.1					54.9				
82	WV	0	21-Oct-97	19-Mar-01	1245	L	37.2					52.3				
83	WV	2	29-Sep-97	15-Apr-98	198	H	28.6	32.4	32.3	0.3		36.6	42.5	39.6	0.8	38.6
83	WV	4	29-Sep-97	15-Apr-98	198	H	30.6					39.3				
83	WV	5	29-Sep-97	16-Apr-98	199	H	36.5					54.3				
83	WV	0	29-Sep-97	19-Mar-01	1267	H	33.9					39.8				
84	WV	4	9-Oct-97	15-Apr-98	188	LM	17.5	22.4	25.7	0.4		10.2	78.5		0.9	23.1
84	WV	2	9-Oct-97	16-Apr-98	189	LM	33.8					21.9				
84	WV	3	9-Oct-97	20-Apr-98	193	LM	34.5					41.6				
84	WV	5	9-Oct-97	20-Apr-98	193	LM	3.8					18.7				
84	WV	0	9-Oct-97	19-Mar-01	1257	LM	GCR					300.0				
85	PA	2	15-Aug-97	10-Apr-98	238	H	153.7	152.2	152.1	0.2		116.5	118.5	119.2	0.4	
85	PA	4	15-Aug-97	10-Apr-98	238	H	154.3					113.3				
85	PA	5	15-Aug-97	14-Apr-98	242	H	150.4					121.8				
85	PA	0	15-Aug-97	19-Mar-01	1312	H	150.4					122.2				
86	PA	2	8-Sep-97	13-Apr-98	217	NA	43.5	39.4	39.5	0.3		547.7	527.9	558.0	0.4	
86	PA	3	8-Sep-97	13-Apr-98	217	NA	37.6					518.0				
86	PA	5	8-Sep-97	14-Apr-98	218	NA	41.4					568.3				
86	PA	0	8-Sep-97	19-Mar-01	1288	NA	35.0					477.5				
87	CO	2	17-Jun-98	1-Feb-99	229	L	10.8	14.4	8.4	0.8	7.4	8.8	12.2	7.1	0.8	6.4
87	CO	4	17-Jun-98	1-Feb-99	229	L	5.5					5.3				
87	CO	5	17-Jun-98	1-Feb-99	229	L	5.9					5.1				
87	CO	1	17-Jun-98	20-Mar-01	1007	L	35.2					29.7				
88	CO	4	17-Jun-98	1-Feb-99	229	NA	65.2	45.5		0.8		40.4	34.7		1.0	40.4
88	CO	6	17-Jun-98	1-Feb-99	229	NA	32.4					23.3				
88	CO	5	17-Jun-98	20-Mar-01	1007	NA	38.9					40.4				
89	CO	2	16-Jun-98	1-Feb-99	230	L	56.4	57.4	55.4	0.7		35.4	37.5	34.7	0.8	34.1
89	CO	4	16-Jun-98	1-Feb-99	230	L	54.4					34.0				
89	CO	5	16-Jun-98	1-Feb-99	230	L	52.9					32.8				
89	CO	3	16-Jun-98	20-Mar-01	1008	L	65.9					47.6				
90	MN	2	7-Jul-99	17-Dec-99	163	H	304.1	310.1	311.1	0.4		178.1	183.1	180.6	0.6	
90	MN	4	7-Jul-99	17-Dec-99	163	H	330.8					174.3				
90	MN	5	7-Jul-99	20-Dec-99	166	H	318.1					196.9				
90	MN	3	7-Jul-99	12-Apr-01	645	H	287.4					183.0				
91	MN	2	7-Jul-99	17-Dec-99	163	L	11.0	6.1	5.1	0.7		1.2	2.5	2.1	0.5	
91	MN	4	7-Jul-99	17-Dec-99	163	L	4.4					2.9				
91	MN	5	7-Jul-99	20-Dec-99	166	L	5.7					1.1				
91	MN	1	7-Jul-99	12-Apr-01	645	L	3.1					4.8				
92	MN	2	6-Jul-99	17-Dec-99	164	L	6.8	5.2	6.5	0.9	6.6	0.0	0.2	0.0	1.0	0.0
92	MN	4	6-Jul-99	17-Dec-99	164	L	6.1					0.0				
92	MN	5	6-Jul-99	20-Dec-99	167	L	6.9					0.0				
92	MN	1	7-Jul-99	12-Apr-01	645	L	0.8					0.6				
93	MN	2	8-Jul-99	17-Dec-99	162	H	GCR					323.3	317.6	320.4	0.6	
93	MN	4	8-Jul-99	17-Dec-99	162	H	GCR					324.4				
93	MN	5	8-Jul-99	20-Dec-99	165	H	GCR					317.4				
93	MN	3	8-Jul-99	12-Apr-01	644	H	GCR					305.1				
94	MN	2	12-Jul-99	16-Dec-99	157	H	GCR					630.4	614.4	629.0	0.8	633.2
94	MN	4	12-Jul-99	16-Dec-99	157	H	GCR					627.5				
94	MN	5	12-Jul-99	20-Dec-99	161	H	GCR					641.6				
94	MN	3	12-Jul-99	12-Apr-01	640	H	GCR					558.2				
95	MN	2	8-Jul-99	16-Dec-99	161	H	566.4	563.8	567.5	0.8	568.2	326.0	328.9	327.7	0.5	
95	MN	4	8-Jul-99	16-Dec-99	161	H	569.8					339.0				
95	MN	5	8-Jul-99	20-Dec-99	165	H	550.6					329.3				
95	MN	3	8-Jul-99	12-Apr-01	644	H	568.5					321.1				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
96	MN	2	9-Jul-99	16-Dec-99	160	L	226.5	198.8	211.7	0.8	216.6	279.8	256.4	268.9	0.8	272.5
96	MN	4	9-Jul-99	16-Dec-99	160	L	209.4					269.5				
96	MN	5	9-Jul-99	20-Dec-99	164	L	214.0					268.2				
96	MN	3	9-Jul-99	12-Apr-01	643	L	145.3					208.2				
97	MN	2	13-Jul-99	16-Dec-99	156	L	401.1	382.7	389.3	0.5		351.7	336.4	340.4	0.4	
97	MN	4	13-Jul-99	16-Dec-99	156	L	377.6					329.0				
97	MN	5	13-Jul-99	20-Dec-99	160	L	401.0					359.2				
97	MN	3	13-Jul-99	12-Apr-01	639	L	351.2					305.5				
98	MN	2	13-Jul-99	17-Dec-99	157	L	8.2	6.2	6.8	0.6		101.0	99.6	100.7	0.6	
98	MN	4	13-Jul-99	17-Dec-99	157	L	6.2					91.4				
98	MN	3	13-Jul-99	20-Dec-99	160	L	7.4					100.4				
98	MN	1	13-Jul-99	12-Apr-01	639	L	2.9					105.7				
99	MN	2	14-Jul-99	17-Dec-99	156	H	541.6	538.1	539.5	0.6		363.8	375.9		0.9	
99	MN	4	14-Jul-99	17-Dec-99	156	H	540.9					360.9				
99	MN	5	14-Jul-99	20-Dec-99	159	H	531.9					403.1				
99	MN	0	14-Jul-99	12-Apr-01	638	H	538.1					GCR				
100	MN	2	14-Jul-99	17-Dec-99	156	L	50.2	44.9	48.9	0.9	49.3	104.9	108.3	108.4	0.1	
100	MN	4	14-Jul-99	17-Dec-99	156	L	48.5					105.4				
100	MN	5	14-Jul-99	20-Dec-99	159	L	49.3					111.4				
100	MN	3	14-Jul-99	12-Apr-01	638	L	31.6					111.4				
101	ME	2	14-Oct-99	24-Jan-00	102	L	129.0	134.5		0.9		GCR				
101	ME	4	14-Oct-99	24-Jan-00	102	L	136.7					GCR				
101	ME	3	14-Oct-99	2-Mar-01	505	L	137.8					GCR				
102	ME	2	12-Oct-99	24-Jan-00	104	H	6.5	9.6	9.3	0.5		14.5	22.8	23.5	0.4	
102	ME	4	12-Oct-99	24-Jan-00	104	H	13.2					29.6				
102	ME	5	12-Oct-99	27-Jan-00	107	H	8.4					21.1				
102	ME	3	12-Oct-99	2-Mar-01	507	H	10.1					25.9				
103	ME	2	13-Oct-99	24-Jan-00	103	H	19.4	13.1	11.0	1.0	10.9	38.4	22.0	17.6	0.9	16.5
103	ME	4	13-Oct-99	24-Jan-00	103	H	11.1					18.0				
103	ME	1	13-Oct-99	27-Jan-00	106	H	10.8					14.4				
103	ME	5	13-Oct-99	2-Mar-01	506	H	10.9					17.2				
104	ME	2	15-Oct-99	25-Jan-00	102	L	385.3	382.6	383.7	0.5		GCR				
104	ME	4	15-Oct-99	25-Jan-00	102	L	382.0					GCR				
104	ME	5	15-Oct-99	27-Jan-00	104	L	397.1					GCR				
104	ME	3	15-Oct-99	2-Mar-01	504	L	365.8					GCR				
105	ME	2	20-Oct-99	25-Jan-00	97	H	421.7	434.3	431.7	0.5		764.0	804.6	800.3	0.3	
105	ME	4	20-Oct-99	25-Jan-00	97	H	437.7					878.4				
105	ME	5	20-Oct-99	27-Jan-00	99	H	452.3					836.6				
105	ME	1	20-Oct-99	2-Mar-01	499	H	425.6					739.3				
106	ME	2	22-Oct-99	25-Jan-00	95	L	361.1	352.2	351.6	0.2		2313.4	2287.3	2303.3	0.8	2306.7
106	ME	4	22-Oct-99	25-Jan-00	95	L	340.7					2309.8				
106	ME	5	22-Oct-99	27-Jan-00	97	L	364.8					2296.8				
106	ME	3	22-Oct-99	2-Mar-01	497	L	342.1					2229.3				
107	ME	2	21-Oct-99	24-Jan-00	95	L	3.9	3.5	3.6	0.7		30.2	27.5	27.5	0.2	
107	ME	4	21-Oct-99	24-Jan-00	95	L	3.0					24.9				
107	ME	5	21-Oct-99	27-Jan-00	98	L	3.6					26.0				
107	ME	3	21-Oct-99	2-Mar-01	498	L	3.6					28.9				
108	ME	2	21-Jun-00	9-Nov-00	141	L	45.5	46.2	45.5	0.9	45.3	327.7	345.9	350.7	0.8	351.9
108	ME	4	21-Jun-00	2-Feb-01	226	L	45.5					351.2				
108	ME	5	21-Jun-00	2-Feb-01	226	L	45.0					350.1				
108	ME	3	21-Jun-00	1-Mar-01	253	L	48.9					354.4				
109	ME	2	29-Jun-00	8-Nov-00	132	L	8.2	5.9	5.4	0.2		17.8	8.6	6.7	0.6	
109	ME	4	29-Jun-00	10-Jan-01	195	L	2.5					4.2				
109	ME	5	29-Jun-00	10-Jan-01	195	L	4.0					3.3				
109	ME	3	29-Jun-00	1-Mar-01	245	L	8.7					9.1				
110	ME	2	20-Jun-00	9-Nov-00	142	L	967.4	918.8				440.4	444.5	442.9	0.6	
110	ME	3	20-Jun-00	5-Feb-01	230	L	GCR					440.3				
110	ME	5	20-Jun-00	5-Feb-01	230	L	GCR					445.4				
110	ME	1	20-Jun-00	1-Mar-01	254	L	870.2					452.0				
111	ME	2	17-Oct-00	27-Nov-00	41	L	11.4	3.8		1.0	0.0	21.9	8.8		0.9	2.3
111	ME	4	17-Oct-00	6-Feb-01	112	L	0.0					2.9				
111	ME	5	17-Oct-00	6-Feb-01	112	L	0.0					1.6				
112	ME	2	18-Oct-00	27-Nov-00	40	L	4.6	2.2	1.6	0.8	1.4	1775.4	1718.3	1706.8	0.5	
112	ME	4	18-Oct-00	6-Feb-01	111	L	1.5					1687.3				
112	ME	5	18-Oct-00	6-Feb-01	111	L	1.0					1726.2				
112	ME	3	18-Oct-00	2-Mar-01	135	L	1.7					1684.3				
113	NA	2	1-Aug-00	2-Nov-00	93	NA	18.4	17.9	18.0	0.3		262.7	258.1	257.3	0.2	
113	NA	4	1-Aug-00	12-Jan-01	164	NA	16.9					266.1				
113	NA	5	1-Aug-00	12-Jan-01	164	NA	18.7					251.8				
113	NA	3	1-Aug-00	2-Mar-01	213	NA	17.5					251.6				
114	RI	2	1-Nov-00	21-Nov-00	20	H	930.0	902.6	923.0	0.9	925.3	403.6	397.1	397.9	0.5	
114	RI	4	1-Nov-00	5-Feb-01	96	H	924.9					396.5				
114	RI	5	1-Nov-00	5-Feb-01	96	H	921.0					389.1				
114	RI	3	1-Nov-00	2-Mar-01	121	H	834.3					399.3				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	Time in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
115	RI	2	31-Oct-00	21-Nov-00	21	H	782.0	759.9	764.9	0.5		512.0	502.4	508.7	0.9	509.8
115	RI	4	31-Oct-00	5-Feb-01	97	H	773.3					480.1				
115	RI	5	31-Oct-00	5-Feb-01	97	H	727.9					509.5				
115	RI	3	31-Oct-00	2-Mar-01	122	H	756.5					507.8				
116	MA	2	30-Oct-00	21-Nov-00	22	H	823.3	812.1	819.0	0.7		399.5	387.6	389.9	0.6	
116	MA	4	30-Oct-00	5-Feb-01	98	H	826.2					371.2				
116	MA	3	30-Oct-00	6-Feb-01	99	H	814.7					387.1				
116	MA	1	30-Oct-00	2-Mar-01	123	H	784.1					392.6				
117	NH	2	9-Aug-00	9-Nov-00	92	L	20.1	10.2	8.0	0.7		74.7	69.0	68.3	0.6	
117	NH	3	9-Aug-00	2-Feb-01	177	L	8.9					68.1				
117	NH	5	9-Aug-00	2-Feb-01	177	L	4.5					64.9				
117	NH	1	9-Aug-00	1-Mar-01	204	L	7.1					68.4				
118	ME	2	18-Jul-00	2-Nov-00	107	H	796.9	728.1	718.3	0.4		GCR				
118	ME	4	18-Jul-00	11-Jan-01	177	H	683.9					GCR				
118	ME	5	18-Jul-00	11-Jan-01	177	H	678.9					GCR				
118	ME	1	18-Jul-00	2-Mar-01	227	H	752.7					GCR				
119	ME	2	12-Jul-00	2-Nov-00	113	H	280.7	279.0	286.1	0.6		369.9	281.5	266.8	0.6	
119	ME	4	12-Jul-00	11-Jan-01	183	H	291.5					253.8				
119	ME	5	12-Jul-00	11-Jan-01	183	H	216.6					222.5				
119	ME	3	12-Jul-00	1-Mar-01	232	H	327.3					279.7				
120	NH	2	28-Aug-00	21-Nov-00	85	L	157.1	143.2	85.3	0.6		148.7	103.6	78.2	0.4	
120	NH	4	28-Aug-00	1-Feb-01	157	L	12.7					7.0				
120	NH	5	28-Aug-00	1-Feb-01	157	L	13.5					7.7				
120	NH	3	28-Aug-00	1-Mar-01	185	L	389.3					251.0				
121	NH	2	25-Sep-00	27-Nov-00	63	H	489.8	493.7	494.5	0.5		241.5	238.1	238.7	0.4	
121	NH	3	25-Sep-00	6-Feb-01	134	H	496.1					232.1				
121	NH	4	25-Sep-00	6-Feb-01	134	H	493.0					235.9				
121	NH	1	25-Sep-00	2-Mar-01	158	H	496.0					242.8				
122	NH	3	24-Aug-00	21-Nov-00	89	L	744.1	725.7	737.6	0.7		372.7	385.4	385.9	0.2	
122	NH	4	24-Aug-00	1-Feb-01	161	L	677.2					399.0				
122	NH	5	24-Aug-00	1-Feb-01	161	L	731.0					405.6				
122	NH	1	24-Aug-00	1-Mar-01	189	L	750.4					364.2				
123	ME	2	19-Jul-00	2-Nov-00	106	H	809.1	742.8	740.0	0.4		434.5	429.2	433.0	0.7	
123	ME	4	19-Jul-00	11-Jan-01	176	H	726.4					431.4				
123	ME	5	19-Jul-00	11-Jan-01	176	H	682.2					439.6				
123	ME	3	19-Jul-00	2-Mar-01	226	H	753.6					411.4				
124	ME	3	22-Aug-00	21-Nov-00	91	H	448.0	455.3	454.1	0.5		844.4	820.5	817.7	0.5	
124	ME	4	22-Aug-00	1-Feb-01	163	H	464.9					811.5				
124	ME	5	22-Aug-00	1-Feb-01	163	H	456.7					802.2				
124	ME	1	22-Aug-00	1-Mar-01	191	H	451.5					823.9				
125	ME	3	23-Aug-00	21-Nov-00	90	H	35.9	36.3	35.6	0.8	35.3	22.3	24.2	23.6	0.5	
125	ME	4	23-Aug-00	1-Feb-01	162	H	35.2					27.6				
125	ME	5	23-Aug-00	1-Feb-01	162	H	34.8					22.1				
125	ME	1	23-Aug-00	1-Mar-01	190	H	39.4					24.8				
126	ME	2	13-Jul-00	8-Nov-00	118	L	8.3	8.3	8.6	0.6		GCR				
126	ME	4	13-Jul-00	11-Jan-01	182	L	8.8					GCR				
126	ME	5	13-Jul-00	11-Jan-01	182	L	9.4					GCR				
126	ME	3	13-Jul-00	1-Mar-01	231	L	6.7					GCR				
127	ME	4	17-Jul-00	11-Jan-01	178	H	985.8	949.1		0.8		GCR				
127	ME	5	17-Jul-00	11-Jan-01	178	H	967.3					GCR				
127	ME	3	17-Jul-00	1-Mar-01	227	H	894.3					GCR				
128	NH	2	5-Jun-00	8-Nov-00	156	L	1.9	5.1	1.8	0.9	1.3	GCR				
128	NH	5	5-Jun-00	21-Nov-00	169	L	1.7					GCR				
128	NH	4	5-Jun-00	5-Feb-01	245	L	16.5					GCR				
128	NH	3	5-Jun-00	1-Mar-01	269	L	0.3					GCR				
129	ME	2	19-Oct-00	27-Nov-00	39	L	6.1	3.1		0.8		3.6	4.2		0.9	3.7
129	ME	4	19-Oct-00	6-Feb-01	110	L	2.0					5.2				
129	ME	5	19-Oct-00	6-Feb-01	110	L	1.2					3.7				
130	MA	2	11-Oct-00	27-Nov-00	47	L	4.3	2.4		0.8		4.8	3.9		0.9	
130	MA	4	11-Oct-00	8-Feb-01	120	L	1.8					4.5				
130	MA	3	11-Oct-00	2-Mar-01	142	L	1.0					2.5				
131	MA	2	12-Oct-00	27-Nov-00	46	L	9.8	7.9		0.8		47.8	49.7		0.6	
131	MA	4	12-Oct-00	8-Feb-01	119	L	6.6					51.4				
131	MA	3	12-Oct-00	2-Mar-01	141	L	7.4					50.0				
132	ME	2	20-Jul-00	2-Nov-00	105	L	105.0	101.0	100.8	0.2		158.2	162.4	157.8	0.9	157.0
132	ME	4	20-Jul-00	12-Jan-01	176	L	95.5					157.3				
132	ME	5	20-Jul-00	12-Jan-01	176	L	107.0					178.8				
132	ME	3	20-Jul-00	2-Mar-01	225	L	96.6					155.4				
133	ME	2	3-Oct-00	27-Nov-00	55	L	6.2	73.1	3.3	1.0	2.2	149.9	155.9	145.6	0.8	142.8
133	ME	4	3-Oct-00	8-Feb-01	128	L	0.3					141.3				
133	ME	5	3-Oct-00	8-Feb-01	128	L	0.0					137.2				
133	ME	3	3-Oct-00	2-Mar-01	150	L	285.9					195.3				
134	ME	2	28-Jun-00	2-Nov-00	127	H	519.0	529.4	531.4	0.6		439.5	374.4	363.0	0.5	
134	ME	4	28-Jun-00	12-Jan-01	198	H	535.7					332.1				
134	ME	5	28-Jun-00	12-Jan-01	198	H	529.1					335.6				
134	ME	3	28-Jun-00	2-Mar-01	247	H	533.7					390.4				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
135	ME	2	16-Oct-00	27-Nov-00	42	H	888.8	878.4	892.1	0.8	894.9	396.7	390.1	388.2	0.9	387.9
135	ME	4	16-Oct-00	8-Feb-01	115	H	900.7					387.3				
135	ME	5	16-Oct-00	8-Feb-01	115	H	895.3					387.7				
135	ME	3	16-Oct-00	2-Mar-01	137	H	828.6					388.6				
136	ME	2	14-Sep-00	27-Nov-00	74	H	411.5	409.0	410.5	0.6		GCR				
136	ME	4	14-Sep-00	6-Feb-01	145	H	409.5					GCR				
136	ME	5	14-Sep-00	6-Feb-01	145	H	418.3					GCR				
136	ME	3	14-Sep-00	2-Mar-01	169	H	396.6					GCR				
137	ME	2	31-Aug-00	9-Nov-00	70	H	155.7	160.6	159.8	0.3		1391.6	1376.9	1383.9	0.6	
137	ME	4	31-Aug-00	1-Feb-01	154	H	166.9					1395.4				
137	ME	5	31-Aug-00	1-Feb-01	154	H	163.4					1376.2				
137	ME	3	31-Aug-00	1-Mar-01	182	H	156.2					1344.4				
138	ME	2	30-Aug-00	9-Nov-00	71	L	8.9	9.9	10.1	0.5		28.3	30.6	30.4	0.2	
138	ME	4	30-Aug-00	1-Feb-01	155	L	10.6					33.6				
138	ME	5	30-Aug-00	1-Feb-01	155	L	9.7					32.5				
138	ME	3	30-Aug-00	1-Mar-01	183	L	10.5					28.0				
139	ME	2	6-Jul-00	8-Nov-00	125	NA	335.6	335.6	337.9	0.6		184.0	174.3	172.3	0.6	
139	ME	4	6-Jul-00	10-Jan-01	188	NA	340.1					175.5				
139	ME	5	6-Jul-00	10-Jan-01	188	NA	350.9					169.0				
139	ME	3	6-Jul-00	1-Mar-01	238	NA	315.8					168.7				
140	ME	2	4-Oct-00	27-Nov-00	54	L	26.2	25.6	25.5	0.4		35.7	35.1	35.7	0.9	35.8
140	ME	4	4-Oct-00	8-Feb-01	127	L	24.1					35.7				
140	ME	5	4-Oct-00	8-Feb-01	127	L	24.8					36.1				
140	ME	3	4-Oct-00	2-Mar-01	149	L	27.4					33.0				
141	ME	2	27-Jun-00	9-Nov-00	135	H	77.2	76.9	77.0	0.5		74.9	74.5	74.2	0.5	
141	ME	4	27-Jun-00	2-Feb-01	220	H	76.2					68.7				
141	ME	5	27-Jun-00	2-Feb-01	220	H	76.8					73.4				
141	ME	3	27-Jun-00	1-Mar-01	247	H	77.3					80.8				
142	NH	2	22-Jun-00	9-Nov-00	140	H	503.6	520.6	520.9	0.1		254.5	260.2	253.6	0.9	253.1
142	NH	5	22-Jun-00	21-Nov-00	152	H	537.2					281.4				
142	NH	4	22-Jun-00	5-Feb-01	228	H	534.6					252.1				
142	NH	3	22-Jun-00	1-Mar-01	252	H	507.1					252.6				
143	NH	2	6-Jun-00	2-Nov-00	149	L	GCR	867.2		0.8		1015.2	934.1	919.2	0.7	
143	NH	4	6-Jun-00	12-Jan-01	220	L	891.2					925.1				
143	NH	5	6-Jun-00	12-Jan-01	220	L	828.9					913.3				
143	NH	3	6-Jun-00	2-Mar-01	269	L	881.4					882.9				
144	NH	2	14-Aug-00	21-Nov-00	99	H	509.6	561.3	506.4	1.0	505.1	347.7	350.5	351.5	0.4	
144	NH	4	14-Aug-00	2-Feb-01	172	H	502.4					355.2				
144	NH	5	14-Aug-00	2-Feb-01	172	H	730.0					358.1				
144	NH	3	14-Aug-00	1-Mar-01	199	H	503.2					340.9				
145	NH	2	21-Aug-00	17-Nov-00	88	L	7.7	78.6	5.4	1.0	4.7	5.8	57.7	5.0	1.0	4.6
145	NH	4	21-Aug-00	1-Feb-01	164	L	3.2					3.8				
145	NH	5	21-Aug-00	2-Feb-01	165	L	3.1					4.2				
145	NH	3	21-Aug-00	1-Mar-01	192	L	300.3					216.9				
146	NH	2	7-Jun-00	8-Nov-00	154	L	27.0	20.1	21.1	0.5		93.0	163.7	184.4	0.9	187.3
146	NH	4	7-Jun-00	10-Jan-01	217	L	19.0					193.1				
146	NH	5	7-Jun-00	10-Jan-01	217	L	11.3					181.9				
146	NH	3	7-Jun-00	1-Mar-01	267	L	23.1					186.9				
147	NH	2	8-Jun-00	8-Nov-00	153	H	GCR					500.6	480.0	496.4	0.8	503.3
147	NH	4	8-Jun-00	10-Jan-01	216	H	GCR					409.9				
147	NH	5	8-Jun-00	10-Jan-01	216	H	GCR					492.1				
147	NH	3	8-Jun-00	1-Mar-01	266	H	GCR					517.3				
148	NH	2	15-Aug-00	9-Nov-00	86	H	549.8	569.2	572.2	0.6		434.0	448.1	445.0	0.7	
148	NH	4	15-Aug-00	2-Feb-01	171	H	568.3					444.5				
148	NH	5	15-Aug-00	2-Feb-01	171	H	576.0					445.4				
148	NH	3	15-Aug-00	1-Mar-01	198	H	582.5					468.6				
149	NH	2	16-Aug-00	17-Nov-00	93	L	7.4	6.2	5.9	0.9	5.8	96.0	88.6	87.4	0.4	
149	NH	4	16-Aug-00	2-Feb-01	170	L	5.8					90.4				
149	NH	5	16-Aug-00	2-Feb-01	170	L	5.8					84.3				
149	NH	3	16-Aug-00	1-Mar-01	197	L	5.9					83.5				
150	NH	3	10-Aug-00	9-Nov-00	91	L	25.2	23.8	23.8	0.1		202.6	196.7	196.4	0.2	
150	NH	4	10-Aug-00	2-Feb-01	176	L	22.4					191.3				
150	NH	5	10-Aug-00	2-Feb-01	176	L	22.2					200.3				
150	NH	1	10-Aug-00	1-Mar-01	203	L	25.3					192.5				
151	NH	2	11-Sep-00	8-Nov-00	58	L	8.1	6.4	7.2	0.8	7.5	12.9	11.0	11.8	0.5	
151	NH	5	11-Sep-00	21-Nov-00	71	L	6.9					14.5				
151	NH	4	11-Sep-00	5-Feb-01	147	L	7.5					10.6				
151	NH	3	11-Sep-00	1-Mar-01	171	L	2.9					5.9				
152	ME	2	15-Jun-00	8-Nov-00	146	L	26.0	23.2	23.7	0.4		189.4	106.0	85.1	0.8	78.2
152	ME	4	15-Jun-00	10-Jan-01	209	L	10.8					64.5				
152	ME	5	15-Jun-00	10-Jan-01	209	L	21.3					91.2				
152	ME	3	15-Jun-00	1-Mar-01	259	L	34.5					79.0				
153	NH	3	11-Sep-00	8-Nov-00	58	H	519.4	530.0	532.0	0.5		565.6	537.1	531.8	0.5	
153	NH	5	11-Sep-00	21-Nov-00	71	H	528.8					519.3				
153	NH	4	11-Sep-00	5-Feb-01	147	H	535.2					521.3				
153	NH	1	11-Sep-00	1-Mar-01	171	H	536.5					542.2				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
154	ME	3	14-Jun-00	10-Jan-01	210	L	43.2	40.9		0.7		54.4	42.8		0.6	
154	ME	4	14-Jun-00	10-Jan-01	210	L	30.3					29.0				
154	ME	1	14-Jun-00	1-Mar-01	260	L	49.1					45.1				
155	NA	2	26-Jul-00	2-Nov-00	99	NA	354.0	163.3	105.2	0.9	99.7	426.5	175.9	95.5	0.9	92.3
155	NA	4	26-Jul-00	12-Jan-01	170	NA	91.9					85.9				
155	NA	5	26-Jul-00	12-Jan-01	170	NA	118.4					103.7				
155	NA	3	26-Jul-00	2-Mar-01	219	NA	88.7					87.3				
156	NA	2	26-Jul-00	2-Nov-00	99	NA	88.3	274.3	332.5	0.9	336.3	82.6	290.3	356.4	1.0	359.5
156	NA	4	26-Jul-00	12-Jan-01	170	NA	343.9					355.6				
156	NA	5	26-Jul-00	12-Jan-01	170	NA	344.0					357.1				
156	NA	3	26-Jul-00	2-Mar-01	219	NA	321.0					365.7				
157	NA	2	27-Jul-00	2-Nov-00	98	NA	314.5	303.2	307.7	0.7		357.1	352.5	357.1	0.8	358.7
157	NA	4	27-Jul-00	12-Jan-01	169	NA	310.8					362.0				
157	NA	5	27-Jul-00	12-Jan-01	169	NA	304.5					357.1				
157	NA	3	27-Jul-00	2-Mar-01	218	NA	283.1					333.6				
158	VA	2	14-Sep-00	26-Sep-00	12	H	607.2	604.5	605.3	0.5		347.2	420.3	351.0	0.9	346.1
158	VA	3	14-Sep-00	26-Sep-00	12	H	603.4					336.2				
158	VA	7	14-Sep-00	9-Feb-01	148	H	592.8					354.8				
158	VA	1	14-Sep-00	21-Feb-01	160	H	614.5					643.1				
159	VA	4	14-Sep-00	26-Sep-00	12	H	666.0	665.3	667.7	0.6		890.0	851.5	851.2	0.2	
159	VA	2	14-Sep-00	26-Sep-00	12	H	669.3					927.2				
159	VA	7	14-Sep-00	9-Feb-01	148	H	641.8					776.3				
159	VA	3	14-Sep-00	21-Feb-01	160	H	684.0					812.3				
160	VA	2	13-Sep-00	26-Sep-00	13	H	378.8	372.3	377.5	0.9	377.9	212.5	209.8	211.8	0.7	
160	VA	4	13-Sep-00	26-Sep-00	13	H	376.3					214.8				
160	VA	7	13-Sep-00	9-Feb-01	149	H	378.6					211.1				
160	VA	5	13-Sep-00	21-Feb-01	161	H	355.3					200.8				
161	VA	2	13-Sep-00	27-Sep-00	14	H	GCR					363.5	349.3	349.8	0.1	
161	VA	4	13-Sep-00	27-Sep-00	14	H	GCR					362.9				
161	VA	7	13-Aug-00	9-Feb-01	180	H	GCR					334.0				
161	VA	3	13-Aug-00	21-Feb-01	192	H	GCR					336.6				
162	DE	2	24-Jul-98	3-Dec-98	132	NA	720.5	722.3	720.9	0.5		355.7	347.6	354.2	0.7	
162	DE	4	24-Jul-98	3-Dec-98	132	NA	691.0					312.9				
162	DE	3	24-Jul-98	7-Dec-98	136	NA	721.3					369.1				
162	DE	1	24-Jul-98	6-Apr-01	987	NA	756.4					352.7				
163	DE	3	24-Jul-98	3-Dec-98	132	NA	866.2	853.6	850.3	0.8	849.4	372.1	373.2	374.9	0.5	
163	DE	4	24-Jul-98	3-Dec-98	132	NA	851.4					363.1				
163	DE	5	24-Jul-98	7-Dec-98	136	NA	847.8					377.6				
163	DE		24-Jul-98	6-Apr-01	987	NA	849.1					379.8				
164	DE	2	20-Jul-98	3-Dec-98	136	NA	596.1	612.2	596.2	1.0	596.7	278.8	277.9	277.5	0.4	
164	DE	4	20-Jul-98	3-Dec-98	136	NA	596.2					276.2				
164	DE	3	20-Jul-98	7-Dec-98	140	NA	597.7					281.6				
164	DE	1	20-Jul-98	6-Apr-01	991	NA	658.6					275.1				
165	DE	2	20-Jul-98	4-Dec-98	137	NA	405.7	404.3	404.9	0.8	405.2	159.0	158.7	156.5	0.6	
165	DE	4	20-Jul-98	4-Dec-98	137	NA	404.8					152.0				
165	DE	5	20-Jul-98	7-Dec-98	140	NA	401.8					153.9				
165	DE		20-Jul-98	6-Apr-01	991	NA	405.0					169.7				
166	DE	2	23-Jul-98	4-Dec-98	134	NA	631.9	650.2	635.1	0.9	633.3	315.3	317.7	317.2	0.4	
166	DE	4	23-Jul-98	4-Dec-98	134	NA	638.3					319.1				
166	DE	5	23-Jul-98	7-Dec-98	137	NA	629.7					321.6				
166	DE	3	23-Jul-98	6-Apr-01	988	NA	701.0					314.6				
167	HI	2	8-Mar-00	31-Oct-00	237	NA	GCR					119.4	124.0	122.8	0.5	
167	HI	4	8-Mar-00	2-Jan-01	300	NA	GCR					125.4				
167	HI	5	8-Mar-00	3-Jan-01	301	H	GCR					131.1				
167	HI	3	8-Mar-00	20-Mar-01	377	H	927.0					120.1				
168	HI	2	21-Mar-00	30-Oct-00	223	H	25.5	43.3	25.1	1.0	24.8	22.2	20.5	20.6	0.3	
168	HI	4	21-Mar-00	28-Dec-00	282	H	24.6					17.7				
168	HI	5	21-Mar-00	28-Dec-00	282	H	24.4					19.0				
168	HI	3	21-Mar-00	20-Mar-01	364	H	98.6					22.9				
169	HI	2	8-May-00	31-Oct-00	176	H	38.4	38.6	38.4	0.7		406.5	355.4	346.5	0.6	
169	HI	4	8-May-00	2-Jan-01	239	H	37.8					333.3				
169	HI	5	8-May-00	2-Jan-01	239	H	38.4					322.3				
169	HI	3	8-May-00	20-Mar-01	316	H	39.7					359.6				
170	HI	2	10-May-00	31-Oct-00	174	H	425.3	411.5	413.6	0.4		119.0	118.7	119.5	0.7	
170	HI	4	10-May-00	2-Jan-01	237	H	419.6					114.5				
170	HI	5	10-May-00	3-Jan-01	238	H	407.5					119.9				
170	HI	3	10-May-00	20-Mar-01	314	H	393.4					121.4				
171	HI	2	15-May-00	1-Nov-00	170	H	38.7	41.1	41.2	0.2		24.1	24.0	23.5	0.6	
171	HI	4	15-May-00	4-Jan-01	234	H	42.6					26.3				
171	HI	5	15-May-00	4-Jan-01	234	H	39.8					22.7				
171	HI	3	15-May-00	20-Mar-01	309	H	43.4					22.8				
172	HI	2	10-Jul-00	30-Oct-00	112	H	14.0	15.1	15.0	0.3		10.1	10.2	9.4	0.6	
172	HI	4	10-Jul-00	27-Dec-00	170	H	16.9					14.5				
172	HI	5	10-Jul-00	27-Dec-00	170	H	13.4					8.6				
172	HI	3	10-Jul-00	20-Mar-01	253	H	15.9					7.7				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage		Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	Time	Geochemical	CFC-11	CFC-11	CFC-11	CFC-11	CFC-12	CFC-12	CFC-12	CFC-12	CFC-12
					in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	pg/kg
173	HI	2	14-Jun-00	1-Nov-00	140	H	576.4	559.4	559.4	0.2		936.4	863.7	855.8	0.6
173	HI	1	14-Jun-00	4-Jan-01	204	H	549.7					847.7			
173	HI	3	14-Jun-00	4-Jan-01	204	H	542.3					806.8			
173	HI	1	14-Jun-00	20-Mar-01	279	H	569.0					863.8			
174	HI	2	26-Jun-00	30-Oct-00	126	H	479.1	475.2	474.9	0.3		127.7	122.7	122.0	0.4
174	HI	4	26-Jun-00	27-Dec-00	184	H	472.8					119.2			
174	HI	5	26-Jun-00	27-Dec-00	184	H	477.0					119.4			
174	HI	3	26-Jun-00	20-Mar-01	267	H	472.0					124.5			
175	VA	2	16-Jul-97	10-Nov-97	117	H	388.7	407.4		1.0	389.5	176.5	181.0		0.7
175	VA	4	16-Jul-97	10-Nov-97	117	H	390.3					179.3			
175	VA	3	16-Jul-97	18-Apr-01	1372	H	443.1					187.1			
176	WV	2	22-May-97	16-Oct-97	147	L,M	89.3	97.9	99.6	0.5		135.1	142.5	142.1	0.3
176	WV	4	22-May-97	16-Oct-97	147	L,M	102.7					146.2			
176	WV	5	22-May-97	30-Oct-97	161	L,M	102.9					150.9			
176	WV	3	22-May-97	18-Apr-01	1427	L,M	96.5					137.9			
177	WV	2	27-May-97	15-Oct-97	141	L	12.9	14.6		0.3		221.8	211.6		0.5
177	WV	4	27-May-97	15-Oct-97	141	L	16.0					207.8			
177	WV	3	22-May-97	16-Oct-97	147	L	13.0					213.2			
177	WV	5	27-May-97	5-Nov-97	162	L	17.3					204.0			
177	WV	1	27-May-97	18-Apr-01	1422	L	13.8					211.2			
178	NC	2	2-Jul-97	6-Nov-97	127	NA	12.2	44.8	40.2	0.4		184.0	184.9	185.5	0.5
178	NC	4	2-Jul-97	6-Nov-97	127	NA	55.2					187.0			
178	NC	5	2-Jul-97	10-Nov-97	131	NA	86.7					180.4			
178	NC	3	2-Jul-97	18-Apr-01	1386	NA	25.2					188.3			
179	WV	3	6-May-97	16-May-97	10	L,M	34.4	17.1		0.4		103.0	79.2		0.5
179	WV	5	6-May-97	16-May-97	10	L,M	22.4					71.6			
179	WV	6	6-May-97	16-May-97	10	L,M	5.6					35.9			
179	WV	7	6-May-97	16-May-97	10	L,M	22.6					73.1			
179	WV	1	6-May-97	18-Apr-01	1443	L,M	0.5					112.3			
180	VA	2	29-Jul-97	7-Nov-97	101	H,M	452.9	449.7	459.5	0.6		203.5	200.6	206.7	0.7
180	VA	4	29-Jul-97	7-Nov-97	101	H,M	466.1					209.9			
180	VA	5	29-Jul-97	12-Nov-97	106	H,M	354.9					165.7			
180	VA	3	29-Jul-97	18-Apr-01	1359	H,M	524.7					223.3			
181	WV	2	13-May-97	15-Oct-97	155	L,M	35.7	33.9	34.9	0.7		56.9	49.5	48.6	0.6
181	WV	4	13-May-97	15-Oct-97	155	L,M	34.1					48.1			
181	WV	5	13-May-97	5-Nov-97	176	L,M	29.8					43.9			
181	WV	3	13-May-97	18-Apr-01	1436	L,M	36.0					49.1			
182	WV	1	28-May-97	6-Oct-97	131	L	100.5	130.3		0.3		80.8	103.1		0.2
182	WV	2	28-May-97	30-Oct-97	155	L	114.1					91.5			
182	WV	4	28-May-97	30-Oct-97	155	L	151.6					118.0			
182	WV	5	28-May-97	5-Nov-97	161	L	176.2					129.5			
182	WV	3	28-May-97	18-Apr-01	1421	L	109.2					95.6			
183	WV	2	13-May-97	27-Oct-97	167	L	GCR					269.5	252.0		0.3
183	WV	4	13-May-97	27-Oct-97	167	L	GCR					260.1			
183	WV	5	13-May-97	5-Nov-97	176	L	GCR					235.5			
183	WV	1	13-May-97	6-Nov-97	177	L	GCR					255.1			
183	WV	3	13-May-97	18-Apr-01	1436	L	GCR					240.0			
184	WV	2	6-Jul-00	5-Dec-00	152	L	4.0	1.8		0.8		15.6	15.1		0.9
184	WV	3	6-Jul-00	5-Dec-00	152	L	1.1					14.1			
184	WV	5	6-Jul-00	17-Apr-01	285	L	0.4					15.7			
185	WV	2	27-Jun-00	5-Dec-00	161	H	231.3	457.8		1.0	227.4	167.9	210.0		1.0
185	WV	4	27-Jun-00	12-Feb-01	230	H	223.4					171.9			
185	WV	3	27-Jun-00	17-Apr-01	294	H	918.7					290.3			
186	WV	2	11-Jul-00	5-Dec-00	147	H	33.2	49.5	45.6	0.7		30.8	36.3	37.5	0.7
186	WV	4	11-Jul-00	12-Feb-01	216	H	46.0					38.0			
186	WV	5	11-Jul-00	12-Feb-01	216	H	73.7					39.3			
186	WV	3	11-Jul-00	17-Apr-01	280	H	45.1					36.9			
187	WV	4	18-Jul-00	12-Feb-01	209	L	ERR					8.5	10.4		0.6
187	WV	5	18-Jul-00	12-Feb-01	209	L	ERR					10.2			
187	WV	3	18-Jul-00	17-Apr-01	273	L	41.8					12.6			
188	WV	2	20-Jul-00	5-Dec-00	138	L	7.8	7.9	7.5	0.5		5.7	7.2	6.9	0.6
188	WV	4	20-Jul-00	12-Feb-01	207	L	1.7					7.2			
188	WV	5	20-Jul-00	12-Feb-01	207	L	14.7					6.6			
188	WV	3	20-Jul-00	17-Apr-01	271	L	7.2					9.3			
189	WV	2	7-Jul-00	5-Dec-00	151	L	55.9	20.1	10.9	0.7		8.6	4.0		0.9
189	WV	4	7-Jul-00	12-Feb-01	220	L	5.2					1.3			
189	WV	5	7-Jul-00	12-Feb-01	220	L	2.9					2.0			
189	WV	3	7-Jul-00	17-Apr-01	284	L	16.5					ERR			
190	WV	2	4-Aug-00	5-Dec-00	123	L	71.0	64.0		0.7		16.0	16.1		0.5
190	WV	4	4-Aug-00	5-Dec-00	123	L	28.7					14.4			
190	WV	5	4-Aug-00	17-Apr-01	256	L	92.2					17.8			

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
191	WV	2	19-Jul-00	5-Dec-00	139	H	575.7	688.5	614.0	0.9	601.2	301.7	287.9	288.7	0.3	
191	WV	4	19-Jul-00	12-Feb-01	208	H	950.2					272.5				
191	WV	5	19-Jul-00	12-Feb-01	208	H	606.7					297.2				
191	WV	3	19-Jul-00	17-Apr-01	272	H	621.2					280.2				
192	WV	2	13-Jul-00	5-Dec-00	145	L	33.1	76.7	38.6	0.9	35.8	38.8	39.2	39.2	0.5	
192	WV	4	13-Jul-00	12-Feb-01	214	L	44.1					32.6				
192	WV	5	13-Jul-00	12-Feb-01	214	L	199.1					39.5				
192	WV	3	13-Jul-00	17-Apr-01	278	L	30.3					45.7				
193	NE	3	9-Sep-98	26-Jan-99	139	M	1.0	0.8	0.9	0.6		0.7	1.3	1.0	0.6	
193	NE	4	9-Sep-98	26-Jan-99	139	M	1.0					0.7				
193	NE	5	9-Sep-98	28-Jan-99	141	M	0.5					1.3				
193	NE	1	9-Sep-98	9-Mar-01	912	M	0.8					2.3				
194	NE	2	10-Sep-98	26-Jan-99	138	L	47.5	49.3	48.7	0.5		73.9	75.7	74.9	0.6	
194	NE	4	10-Sep-98	26-Jan-99	138	L	47.2					73.3				
194	NE	5	10-Sep-98	29-Jan-99	141	L	49.9					79.5				
194	NE	3	10-Sep-98	9-Mar-01	911	L	52.6					75.9				
195	NE	2	10-Sep-98	27-Jan-99	139	L,M	2.2	0.9	0.6	0.7		84.1	87.9	87.2	0.6	
195	NE	4	10-Sep-98	27-Jan-99	139	L,M	0.6					87.6				
195	NE	5	10-Sep-98	29-Jan-99	141	L,M	0.6					86.7				
195	NE	3	10-Sep-98	9-Mar-01	911	L,M	0.0					93.1				
196	NE	2	10-Sep-98	26-Jan-99	138	L	132.4	70.1	50.5	0.9	49.3	75.5	45.8	37.1	0.8	35.9
196	NE	4	10-Sep-98	26-Jan-99	138	L	47.1					33.7				
196	NE	5	10-Sep-98	28-Jan-99	140	L	48.4					33.4				
196	NE	3	10-Sep-98	9-Mar-01	911	L	52.5					40.5				
197	NE	2	10-Sep-98	26-Jan-99	138	NA	177.1	183.9	179.5	0.8	178.7	158.3	166.3	168.5	0.8	169.0
197	NE	4	10-Sep-98	26-Jan-99	138	NA	181.9					169.2				
197	NE	5	10-Sep-98	28-Jan-99	140	NA	199.7					167.7				
197	NE	3	10-Sep-98	9-Mar-01	911	NA	177.0					170.1				
198	NE	2	12-Sep-98	27-Jan-99	137	NA	3.2	2.5	2.9	0.6		14.8	15.0	15.2	0.5	
198	NE	4	12-Sep-98	27-Jan-99	137	NA	2.6					13.8				
198	NE	5	12-Sep-98	1-Feb-99	142	NA	3.7					15.6				
198	NE	1	12-Sep-98	9-Mar-01	909	NA	0.6					15.7				
199	NE	2	12-Sep-98	27-Jan-99	137	NA	9.8	6.1	5.1	0.8	4.8	24.6	26.1	26.1	0.5	
199	NE	4	12-Sep-98	27-Jan-99	137	NA	4.8					26.2				
199	NE	5	12-Sep-98	1-Feb-99	142	NA	5.4					27.6				
199	NE	1	12-Sep-98	9-Mar-01	909	NA	4.3					25.9				
200	NE	2	11-Sep-98	26-Jan-99	137	L,M	121.3	108.5	111.6	0.6		220.4	220.4	222.1	0.6	
200	NE	4	11-Sep-98	26-Jan-99	137	L,M	114.3					230.5				
200	NE	5	11-Sep-98	29-Jan-99	140	L,M	108.9					223.7				
200	NE	0	11-Sep-98	9-Mar-01	910	L,M	89.4					206.8				
201	NE	3	11-Sep-98	28-Jan-99	139	L,M	0.6	88.4	1.0	1.0	0.8	147.1	152.2	147.4	0.8	145.2
201	NE	5	11-Sep-98	28-Jan-99	139	L,M	0.5					140.9				
201	NE	4	11-Sep-98	29-Jan-99	140	L,M	1.3					147.6				
201	NE	2	11-Sep-98	9-Mar-01	910	L,M	351.3					173.3				
202	MN	4	15-May-98	29-Sep-98	137	L	3.6	4.7	4.6	0.4		1576.2	1581.9	1599.5	0.6	
202	MN	2	14-May-98	29-Sep-98	138	L	6.1					1633.6				
202	MN	5	14-May-98	1-Oct-98	140	L	5.1					1622.7				
202	MN	3	14-May-98	18-Apr-01	1070	L	4.0					1494.9				
203	MN	2	12-May-98	29-Sep-98	140	H	GCR					955.9	710.6	699.9	0.5	
203	MN	4	12-May-98	29-Sep-98	140	H	GCR					676.4				
203	MN	5	12-May-98	1-Oct-98	142	H	GCR					723.4				
203	MN	3	12-May-98	18-Apr-01	1072	H	GCR					486.6				
204	MN	2	6-May-98	30-Sep-98	147	H	902.2	950.4				274.2	213.7	194.7	0.9	193.5
204	MN	4	6-May-98	30-Sep-98	147	H	GCR					197.6				
204	MN	5	6-May-98	1-Oct-98	148	H	GCR					191.8				
204	MN	3	6-May-98	18-Apr-01	1078	H	998.6					191.2				
205	MN	2	13-May-98	29-Sep-98	139	H	835.8	841.9	839.4	0.5		484.6	463.6	464.1	0.3	
205	MN	4	13-May-98	28-Sep-98	138	H	820.7					454.0				
205	MN	5	13-May-98	30-Sep-98	140	H	868.2					474.2				
205	MN	3	13-May-98	18-Apr-01	1071	H	842.9					441.7				
206	MN	2	12-May-98	28-Sep-98	139	H	847.8	856.3	856.3	0.1		653.3	653.1	655.4	0.7	
206	MN	4	12-May-98	28-Sep-98	139	H	849.3					658.8				
206	MN	5	12-May-98	30-Sep-98	141	H	863.2					642.9				
206	MN	3	12-May-98	18-Apr-01	1072	H	865.0					657.4				
207	MN	2	5-May-98	28-Sep-98	146	H	46.8	49.4		0.2		81.9	83.7		0.9	81.7
207	MN	3	5-May-98	28-Sep-98	146	H	47.8					81.0				
207	MN	4	5-May-98	28-Sep-98	146	H	47.6					81.3				
207	MN	5	5-May-98	1-Oct-98	149	H	52.9					91.9				
207	MN	1	5-May-98	18-Apr-01	1079	H	51.7					82.6				
208	MN	2	6-May-98	30-Sep-98	147	H	GCR					116.8	117.4	116.0	0.7	
208	MN	4	6-May-98	30-Sep-98	147	H	GCR					113.7				
208	MN	5	6-May-98	1-Oct-98	148	H	GCR					123.9				
208	MN	3	6-May-98	18-Apr-01	1078	H	GCR					115.2				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
209	MN	2	13-May-98	28-Sep-98	138	H	GCR						357.1	356.4	358.3	0.6
209	MN	4	13-May-98	28-Sep-98	138	H	GCR						367.0			
209	MN	3	13-May-98	30-Sep-98	140	H	GCR						359.5			
209	MN	1	13-May-98	18-Apr-01	1071	H	GCR						341.8			
210	MN	2	13-May-98	28-Sep-98	138	H	GCR						168.6	160.9	163.4	0.7
210	MN	4	13-May-98	28-Sep-98	138	H	GCR						163.5			
210	MN	5	13-May-98	1-Oct-98	141	H	GCR						163.3			
210	MN	3	13-May-98	18-Apr-01	1071	H	GCR						148.3			
211	VA	2	5-Aug-98	16-Dec-98	133	H	GCR						408.0	382.8	385.0	0.4
211	VA	4	5-Aug-98	16-Dec-98	133	H	GCR						353.2			
211	VA	6	5-Aug-98	16-Dec-98	498	H	GCR						376.8			
211	VA	3	5-Aug-98	12-Mar-01	950	H	GCR						393.2			
212	VA	2	31-Aug-98	18-Dec-98	109	L,M	11.6	11.2	11.3	0.5			20.8	20.9	20.3	0.6
212	VA	5	31-Aug-98	18-Dec-98	109	L,M	12.2						19.4			
212	VA	6	31-Aug-98	26-Apr-99	238	L,M	11.0						19.8			
212	VA	3	31-Aug-98	12-Mar-01	924	L,M	10.0						23.4			
213	VA	2	13-Sep-99	11-Jan-00	120	H	138.0	103.7	95.0	0.8	92.2	1296.5	1283.9	1284.8	0.5	
213	VA	5	13-Sep-99	11-Jan-00	120	H	86.7						1285.2			
213	VA	6	13-Sep-99	11-Jan-00	120	H	93.2						1284.3			
213	VA	4	13-Sep-99	12-Mar-01	546	H	96.7						1269.4			
214	VA	2	23-Aug-99	21-Dec-99	120	H	264.6	247.9		0.7			1197.6	1183.2		0.7
214	VA	6	23-Aug-99	27-Dec-99	126	H	243.8						1219.3			
214	VA	5	23-Aug-99	12-Mar-01	567	H	235.3						1132.8			
215	VA	2	23-Aug-99	21-Dec-99	120	H	37.3	40.1	39.9	0.2			210.6	210.1	209.4	0.5
215	VA	4	23-Aug-99	21-Dec-99	120	H	42.4						206.8			
215	VA	6	23-Aug-99	27-Dec-99	126	H	43.7						214.9			
215	VA	5	23-Aug-99	12-Mar-01	567	H	36.8						208.2			
216	VA	2	30-Aug-99	22-Dec-99	114	H	505.8	503.3	502.8	0.4			252.5	254.4	252.2	0.9
216	VA	4	30-Aug-99	22-Dec-99	114	H	517.7						251.9			251.9
216	VA	6	30-Aug-99	28-Dec-99	120	H	489.8						261.9			
216	VA	5	30-Aug-99	12-Mar-01	560	H	499.8						251.2			
217	VA	2	31-Aug-99	23-Dec-99	114	H	28.2	26.6	26.7	0.3			88.6	88.4	88.2	0.5
217	VA	4	31-Aug-99	23-Dec-99	114	H	25.2						87.7			
217	VA	6	31-Aug-99	28-Dec-99	119	H	23.0						84.4			
217	VA	5	31-Aug-99	12-Mar-01	559	H	30.1						92.8			
218	VA	2	1-Sep-99	23-Dec-99	113	H	893.9	915.3		0.8			297.6	313.8	317.4	0.7
218	VA	4	1-Sep-99	23-Dec-99	113	H	985.9						322.7			
218	VA	6	1-Sep-99	28-Dec-99	118	H	GCR						319.2			
218	VA	3	1-Sep-99	12-Mar-01	558	H	866.2						315.6			
219	VA	2	1-Sep-99	23-Dec-99	113	H	GCR						781.7	768.0	770.3	0.4
219	VA	4	1-Sep-99	23-Dec-99	113	H	GCR						758.9			
219	VA	6	1-Sep-99	28-Dec-99	118	H	GCR						796.1			
219	VA	3	1-Sep-99	12-Mar-01	558	H	GCR						735.3			
220	VA	2	1-Sep-99	23-Dec-99	113	L	3.2	3.8	3.6	0.7			119.3	120.5	120.8	0.4
220	VA	4	1-Sep-99	23-Dec-99	113	L	3.7						123.3			
220	VA	6	1-Sep-99	28-Dec-99	118	L	4.8						117.1			
220	VA	5	1-Sep-99	12-Mar-01	558	L	3.5						122.3			
221	VA	4	2-Sep-99	23-Dec-99	112	H	550.4	548.5	555.1	0.7			311.2	305.9	308.2	0.6
221	VA	2	2-Sep-99	27-Dec-99	116	H	563.8						310.7			
221	VA	6	2-Sep-99	28-Dec-99	117	H	520.1						305.7			
221	VA	5	2-Sep-99	12-Mar-01	557	H	559.8						296.0			
222	VA	2	2-Sep-99	23-Dec-99	112	H	465.1	458.6	458.8	0.3			306.2	308.1	307.2	0.5
222	VA	4	2-Sep-99	23-Dec-99	112	H	473.8						319.4			
222	VA	6	2-Sep-99	28-Dec-99	117	H	442.9						298.7			
222	VA	3	2-Sep-99	12-Mar-01	557	H	452.4						308.1			
223	VA	2	12-Sep-99	21-Dec-99	100	H	2.4	12.1	2.1	1.0	1.9		131.3	129.0	128.9	0.4
223	VA	4	12-Sep-99	21-Dec-99	100	H	1.7						128.5			
223	VA	6	2-Sep-99	27-Dec-99	116	H	1.5						129.3			
223	VA	5	2-Sep-99	12-Mar-01	557	H	42.8						126.8			
224	VA	2	10-Aug-99	21-Dec-99	133	H	5.1	3.6	3.7	0.5			5.8	4.8	4.7	0.3
224	VA	4	10-Aug-99	21-Dec-99	133	H	3.7						6.7			
224	VA	6	10-Aug-99	27-Dec-99	139	H	1.8						3.6			
224	VA	5	10-Aug-99	12-Mar-01	580	H	3.6						3.2			
225	VA	2	11-Aug-99	21-Dec-99	132	H	10.4	9.6	9.7	0.1			22.2	22.5	22.3	0.8
225	VA	4	11-Aug-99	21-Dec-99	132	H	8.8						22.0			22.2
225	VA	6	11-Aug-99	27-Dec-99	138	H	8.9						22.3			
225	VA	5	11-Aug-99	12-Mar-01	579	H	10.4						23.3			
226	VA	2	11-Aug-99	21-Dec-99	132	H	578.2	579.8	584.8	0.6			291.3	315.5	318.0	0.5
226	VA	4	11-Aug-99	21-Dec-99	132	H	591.3						311.1			
226	VA	6	11-Aug-99	27-Dec-99	138	H	558.2						334.7			
226	VA	3	11-Aug-99	12-Mar-01	579	H	591.5						324.9			
227	VA	2	12-Aug-99	21-Dec-99	131	H	18.7	19.1	18.6	0.7			53.0	54.1	54.3	0.4
227	VA	4	12-Aug-99	21-Dec-99	131	H	18.5						50.0			
227	VA	6	12-Aug-99	27-Dec-99	137	H	17.7						57.6			
227	VA	5	12-Aug-99	12-Mar-01	578	H	21.5						55.6			

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
228	VA	2	24-Aug-99	22-Dec-99	120	H	511.0	523.1	508.4	0.8	502.8	951.0	844.2	919.2	0.9	929.8
228	VA	4	24-Aug-99	22-Dec-99	120	H	505.8					928.1				
228	VA	6	24-Aug-99	27-Dec-99	125	H	491.6					910.2				
228	VA	5	24-Aug-99	12-Mar-01	566	H	583.8					587.4				
229	VA	2	24-Aug-99	22-Dec-99	120	H	549.6	532.7	534.9	0.6		254.9	253.1	254.3	0.6	
229	VA	4	24-Aug-99	22-Dec-99	120	H	532.7					253.6				
229	VA	6	24-Aug-99	27-Dec-99	125	H	511.3					240.9				
229	VA	5	24-Aug-99	12-Mar-01	566	H	537.0					262.8				
230	VA	2	25-Aug-99	22-Dec-99	119	H	184.9	170.4	169.7	0.4		145.1	142.1	141.8	0.4	
230	VA	4	25-Aug-99	22-Dec-99	119	H	173.1					138.4				
230	VA	6	25-Aug-99	28-Dec-99	125	H	166.3					127.2				
230	VA	3	25-Aug-99	27-Mar-01	580	H	157.2					157.5				
231	VA	2	26-Aug-99	22-Dec-99	118	H	277.1	267.0	270.3	0.6		142.7	139.4	141.8	0.9	142.1
231	VA	4	26-Aug-99	22-Dec-99	118	H	273.5					141.6				
231	VA	6	26-Aug-99	28-Dec-99	124	H	267.0					131.4				
231	VA	5	26-Aug-99	12-Mar-01	564	H	250.3					141.9				
232	VA	2	26-Aug-99	22-Dec-99	118	L	275.4	264.0		0.4		GCR				
232	VA	4	26-Aug-99	22-Dec-99	118	L	267.7					GCR				
232	VA	6	26-Aug-99	28-Dec-99	124	L	263.6					GCR				
232	VA	3	26-Aug-99	25-Jul-00	334	L	256.6					GCR				
232	VA	1	26-Aug-99	12-Mar-01	564	L	256.5					GCR				
233	VA	2	18-Jul-00	24-Oct-00	98	H	133.8	137.0	135.4	0.6		68.0	63.3	63.5	0.2	
233	VA	5	18-Jul-00	24-Oct-00	98	H	136.9					58.3				
233	VA	6	18-Jul-00	25-Oct-00	99	H	149.2					60.4				
233	VA	4	18-Jul-00	13-Mar-01	238	H	128.0					66.6				
234	VA	2	19-Jul-00	24-Oct-00	97	H	813.4	846.9	824.6	0.8		37.1	36.8	36.7	0.5	
234	VA	5	19-Jul-00	24-Oct-00	97	H	835.7					36.3				
234	VA	6	19-Jul-00	25-Oct-00	98	H	935.1					39.4				
234	VA	4	19-Jul-00	14-Mar-01	238	H	803.4					34.5				
235	VA	2	19-Jul-00	24-Oct-00	97	H	64.4	64.8	64.5	0.6		34.9	31.0	30.1	0.7	
235	VA	5	19-Jul-00	24-Oct-00	97	H	63.0					29.5				
235	VA	6	19-Jul-00	25-Oct-00	98	H	64.6					30.6				
235	VA	4	19-Jul-00	14-Mar-01	238	H	67.2					29.1				
236	VA	6	20-Jul-00	24-Oct-00	96	H	555.8	554.5	554.9	0.5		1385.9	1408.1	1410.5	0.5	
236	VA	2	20-Jul-00	25-Oct-00	97	H	554.0					1425.5				
236	VA	5	20-Jul-00	25-Oct-00	97	H	543.5					1416.2				
236	VA	4	20-Jul-00	14-Mar-01	237	H	564.5					1404.8				
237	VA	6	20-Jul-00	24-Oct-00	96	H	53.7	54.5	54.6	0.2		64.5	65.8	65.0	0.7	
237	VA	2	20-Jul-00	25-Oct-00	97	H	55.5					65.5				
237	VA	5	20-Jul-00	25-Oct-00	97	H	53.2					69.1				
237	VA	4	20-Jul-00	14-Mar-01	237	H	55.6					64.1				
238	VA	6	20-Jul-00	24-Oct-00	96	H	586.1	598.7	599.1	0.4		1825.6	1832.8	1832.7	0.4	
238	VA	2	20-Jul-00	25-Oct-00	97	H	595.7					1839.8				
238	VA	5	20-Jul-00	25-Oct-00	97	H	602.5					1863.2				
238	VA	4	20-Jul-00	14-Mar-01	237	H	610.4					1802.6				
239	VA	2	10-Jul-00	29-Sep-00	81	M	188.8	274.8		0.7		20.7	236.6		0.6	
239	VA	4	10-Jul-00	29-Sep-00	81	M	GCR					198.8				
239	VA	6	10-Jul-00	3-Oct-00	85	M	603.0					490.2				
239	VA	5	10-Jul-00	15-Mar-01	248	M	32.5					ERR				
240	VA	2	10-Jul-00	29-Sep-00	81	M	33.7	46.1	34.3	0.8	28.8	8.4	16.8	10.7	0.8	8.5
240	VA	4	10-Jul-00	29-Sep-00	81	M	34.8					41.6				
240	VA	6	10-Jul-00	3-Oct-00	85	M	17.8					4.2				
240	VA	5	10-Jul-00	15-Mar-01	248	M	98.0					12.9				
241	VA	2	20-Jul-00	16-Oct-00	88	H	348.6	339.7	345.9	0.8	346.8	241.8	229.5	229.4	0.3	
241	VA	4	20-Jul-00	16-Oct-00	88	H	348.1					234.3				
241	VA	6	20-Jul-00	17-Oct-00	89	H	343.7					224.5				
241	VA	5	20-Jul-00	14-Mar-01	237	H	318.5					217.5				
242	VA	2	11-Jul-00	29-Sep-00	80	L	4.9	4.1	4.4	0.5		2.7	5.6	5.1	0.4	
242	VA	4	11-Jul-00	29-Sep-00	80	L	6.8					6.9				
242	VA	6	11-Jul-00	3-Oct-00	84	L	3.9					9.7				
242	VA	5	11-Jul-00	15-Mar-01	247	L	0.8					3.2				
243	VA	2	12-Jul-00	28-Sep-00	78	H,M	8.4	8.2	8.0	0.5		20.5	22.4	20.6	0.8	20.1
243	VA	4	12-Jul-00	29-Sep-00	79	H,M	7.6					20.7				
243	VA	6	12-Jul-00	3-Oct-00	83	H,M	9.9					19.1				
243	VA	5	12-Jul-00	15-Mar-01	246	H,M	7.0					29.4				
244	VA	2	13-Jul-00	28-Sep-00	77	L,M	15.5	15.8	16.2	0.5		46.6	46.0	45.9	0.3	
244	VA	3	13-Jul-00	28-Sep-00	77	L,M	16.9					45.0				
244	VA	6	13-Jul-00	2-Oct-00	81	L,M	16.8					45.2				
244	VA	5	13-Jul-00	13-Mar-01	243	L,M	14.0					47.3				
245	VA	2	13-Jul-00	4-Oct-00	83	H,M	5.4	4.7	5.1	0.6		0.0	0.0	0.0	0.0	
245	VA	4	13-Jul-00	4-Oct-00	83	H,M	6.3					0.0				
245	VA	6	13-Jul-00	11-Oct-00	90	H,M	4.7					0.0				
245	VA	5	13-Jul-00	13-Mar-01	243	H,M	2.3					0.0				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
246	VA	2	10-Jul-00	10-Oct-00	92	H	266.8	262.0	262.3	0.1			183.2	182.4	178.7	0.6
246	VA	4	10-Jul-00	11-Oct-00	93	H	256.2						170.9			
246	VA	6	10-Jul-00	11-Oct-00	93	H	257.7						174.1			
246	VA	5	10-Jul-00	13-Mar-01	246	H	267.2						201.5			
247	VA	2	10-Jul-00	10-Oct-00	92	H,M	45.5	40.2	43.9	0.9	44.4		14.7	13.4	13.1	0.7
247	VA	4	10-Jul-00	10-Oct-00	92	H,M	43.1						12.8			
247	VA	6	10-Jul-00	11-Oct-00	93	H,M	44.6						13.3			
247	VA	5	10-Jul-00	13-Mar-01	246	H,M	27.4						12.9			
248	VA	3	11-Jul-00	10-Oct-00	91	H,M	2.0	1.1	1.1	0.2			5.1	4.1	4.2	0.2
248	VA	4	11-Jul-00	10-Oct-00	91	H,M	1.7						5.2			
248	VA	6	11-Jul-00	11-Oct-00	92	H,M	0.3						3.3			
248	VA	5	11-Jul-00	13-Mar-01	245	H,M	0.5						2.9			
249	VA	2	11-Jul-00	10-Oct-00	91	H,M	4.5	4.0	4.1	0.4			8.4	8.0	7.9	0.4
249	VA	4	11-Jul-00	10-Oct-00	91	H,M	5.0						6.7			
249	VA	6	11-Jul-00	11-Oct-00	92	H,M	3.6						9.5			
249	VA	5	11-Jul-00	13-Mar-01	245	H,M	2.7						7.4			
250	VA	2	12-Jul-00	10-Oct-00	90	H,M	26.0	20.4	23.7	0.7			GCR			
250	VA	4	12-Jul-00	10-Oct-00	90	H,M	26.3						GCR			
250	VA	6	12-Jul-00	11-Oct-00	91	H,M	21.4						GCR			
250	VA	5	12-Jul-00	13-Mar-01	244	H,M	7.8						GCR			
251	VA	2	12-Jul-00	4-Oct-00	84	H,M	10.5	8.8	8.5	0.6			6.9	4.3	3.8	0.7
251	VA	4	12-Jul-00	4-Oct-00	84	H,M	8.8						2.8			
251	VA	6	12-Jul-00	11-Oct-00	91	H,M	7.8						4.2			
251	VA	3	12-Jul-00	13-Mar-01	244	H,M	8.1						3.3			
252	VA	2	27-Jun-00	2-Oct-00	97	H	552.9	561.0	560.5	0.2			482.6	509.2	480.4	0.9
252	VA	4	27-Jun-00	2-Oct-00	97	H	551.9						478.1			
252	VA	6	27-Jun-00	3-Oct-00	98	H	571.1						475.6			
252	VA	5	27-Jun-00	13-Mar-01	259	H	568.1						600.5			
253	VA	2	27-Jun-00	2-Oct-00	97	H	250.9	333.2	250.0	1.0	246.2		297.8	297.9	297.5	0.5
253	VA	4	27-Jun-00	2-Oct-00	97	H	249.1						297.2			
253	VA	6	27-Jun-00	3-Oct-00	98	H	594.2						274.5			
253	VA	5	27-Jun-00	13-Mar-01	259	H	238.7						322.2			
254	VA	2	28-Jun-00	2-Oct-00	96	H	60.3	232.7	58.9	1.0	57.8		142.6	147.8	141.1	0.8
254	VA	4	28-Jun-00	2-Oct-00	96	H	57.4						139.6			
254	VA	6	28-Jun-00	3-Oct-00	97	H	55.7						131.4			
254	VA	5	28-Jun-00	15-Mar-01	260	H	757.4						177.4			
255	VA	2	28-Jun-00	2-Oct-00	96	H	614.1	452.9	416.4	0.6			100.8	104.4	100.0	0.9
255	VA	4	28-Jun-00	2-Oct-00	96	H	453.5						119.2			
255	VA	6	28-Jun-00	3-Oct-00	97	H	379.3						99.1			
255	VA	5	28-Jun-00	15-Mar-01	260	H	364.5						98.3			
256	VA	2	29-Jun-00	29-Sep-00	92	H	1.8	2.7	2.2	0.9	2.0		391.7	393.4	395.7	0.5
256	VA	4	29-Jun-00	2-Oct-00	95	H	2.2						402.1			
256	VA	6	29-Jun-00	3-Oct-00	96	H	4.7						399.6			
256	VA	5	29-Jun-00	15-Mar-01	259	H	2.1						380.2			
257	VA	2	29-Jun-00	29-Sep-00	92	H	32.4	32.7	32.6	0.5			66.0	68.9	69.6	0.7
257	VA	4	29-Jun-00	29-Sep-00	92	H	32.2						70.0			
257	VA	6	29-Jun-00	3-Oct-00	96	H	32.8						70.4			
257	VA	5	29-Jun-00	15-Mar-01	259	H	33.3						69.2			
258	VA	5	14-Aug-00	18-Oct-00	65	L,M	GCR	67.5		1.0	0.4		6.6	24.7	3.3	0.9
258	VA	2	14-Aug-00	23-Oct-00	70	L,M	201.8						92.0			
258	VA	4	14-Aug-00	23-Oct-00	70	L,M	0.7						0.0			
258	VA	3	14-Aug-00	14-Mar-01	212	L,M	0.0						0.0			
259	VA	5	11-Aug-00	18-Oct-00	68	L,M	0.7	0.6	0.6	0.3			3.6	2.8	2.8	0.3
259	VA	2	11-Aug-00	23-Oct-00	73	L,M	0.8						2.5			
259	VA	4	11-Aug-00	23-Oct-00	73	L,M	0.4						3.1			
259	VA	3	11-Aug-00	14-Mar-01	215	L,M	0.5						2.1			
260	VA	2	10-Aug-00	19-Oct-00	70	H,M	73.1	75.5	77.1	0.5			11.9	10.7	11.7	0.8
260	VA	4	10-Aug-00	19-Oct-00	70	H,M	86.1						11.5			
260	VA	5	10-Aug-00	19-Oct-00	70	H,M	81.0						12.3			
260	VA	3	10-Aug-00	14-Mar-01	216	H,M	61.8						7.2			
261	VA	2	9-Aug-00	19-Oct-00	71	L,M	ERR						5.5	6.3		0.6
261	VA	4	9-Aug-00	19-Oct-00	71	L,M	37.5						7.2			
261	VA	5	9-Aug-00	19-Oct-00	71	L,M	ERR						6.2			
261	VA	3	9-Aug-00	14-Mar-01	217	L,M	0.0						ERR			
262	VA	2	16-Aug-00	18-Oct-00	63	L	0.0	20.3	20.4	0.2			3.2	14.7	12.3	0.5
262	VA	4	16-Aug-00	18-Oct-00	63	L	40.4						6.9			
262	VA	5	16-Aug-00	23-Oct-00	68	L	9.8						17.7			
262	VA	3	16-Aug-00	14-Mar-01	210	L	31.0						31.1			
263	VA	2	17-Aug-00	18-Oct-00	62	L,M	3.1	1.2		0.5			5.3	3.7		0.7
263	VA	4	17-Aug-00	18-Oct-00	62	L,M	0.4						4.3			
263	VA	3	17-Aug-00	23-Oct-00	67	L,M	0.7						3.8			
263	VA	5	17-Aug-00	23-Oct-00	67	L,M	0.0						0.0			
263	VA	1	17-Aug-00	14-Mar-01	209	L,M	1.7						5.1			
264	VA	2	16-Aug-00	18-Oct-00	63	L,M	0.0	44.7	35.7	0.5			1.4	6.3	7.0	0.6
264	VA	3	16-Aug-00	18-Oct-00	63	L,M	51.5						6.3			
264	VA	5	16-Aug-00	23-Oct-00	68	L,M	107.3						9.9			
264	VA	1	16-Aug-00	14-Mar-01	210	L,M	19.9						7.7			

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
265	VA	2	15-Aug-00	18-Oct-00	64	L,M	1.4	0.9	1.0	0.2		10.4	10.5	10.7	0.6	
265	VA	4	15-Aug-00	18-Oct-00	64	L,M	0.3					9.6				
265	VA	5	15-Aug-00	23-Oct-00	69	L,M	1.4					11.0				
265	VA	3	15-Aug-00	14-Mar-01	211	L,M	0.5					11.0				
266	VA	2	8-Aug-00	19-Oct-00	72	L,M	3.8	4.9	4.3	0.7		0.0	3.1	0.0	1.0	0.0
266	VA	4	8-Aug-00	19-Oct-00	72	L,M	3.3					0.0				
266	VA	5	8-Aug-00	19-Oct-00	72	L,M	7.7					12.4				
266	VA	3	8-Aug-00	14-Mar-01	218	L,M	4.8					0.0				
267	VA	4	7-Aug-00	19-Oct-00	73	L,M	0.0	6.2	0.0	1.0	0.0	0.0	9.6	0.0	1.0	0.0
267	VA	5	7-Aug-00	19-Oct-00	73	L,M	0.0					0.0				
267	VA	2	7-Aug-00	23-Oct-00	77	L,M	24.6					38.2				
267	VA	3	7-Aug-00	14-Mar-01	219	L,M	0.0					0.0				
268	VA	2	12-Jul-00	28-Sep-00	78	L,M	9.6	9.1	9.2	0.2		22.2	21.3	21.3	0.1	
268	VA	4	12-Jul-00	28-Sep-00	78	L,M	9.7					20.5				
268	VA	6	12-Jul-00	2-Oct-00	82	L,M	8.7					22.0				
268	VA	5	12-Jul-00	15-Mar-01	246	L,M	8.5					20.4				
269	VA	2	13-Jul-00	4-Oct-00	83	H,M	9.0	8.2	8.1	0.5		9.7	8.5	8.1	0.9	8.1
269	VA	4	13-Jul-00	4-Oct-00	83	H,M	8.2					8.1				
269	VA	3	13-Jul-00	11-Oct-00	90	H,M	7.5					8.0				
269	VA	5	13-Jul-00	13-Mar-01	243	H,M	8.0					8.1				
270	VA	3	13-Jul-00	28-Sep-00	77	H,M	81.4	77.6	77.9	0.4		58.9	61.0	61.3	0.3	
270	VA	4	13-Jul-00	28-Sep-00	77	H,M	79.5					62.5				
270	VA	6	13-Jul-00	2-Oct-00	81	H,M	76.2					60.1				
270	VA	5	13-Jul-00	13-Mar-01	243	H,M	73.1					62.5				
271	VA	2	17-Jul-00	12-Oct-00	87	L,M	31.8	18.8	15.1	0.9	14.4	15.2	10.1	9.9	0.5	
271	VA	4	17-Jul-00	12-Oct-00	87	L,M	15.9					10.4				
271	VA	6	17-Jul-00	17-Oct-00	92	L,M	14.3					9.3				
271	VA	5	17-Jul-00	13-Mar-01	239	L,M	13.1					5.4				
272	VA	2	17-Jul-00	12-Oct-00	87	H	23.9	23.6	23.1	0.6		72.8	70.5	70.8	0.4	
272	VA	4	17-Jul-00	12-Oct-00	87	H	21.9					72.1				
272	VA	6	17-Jul-00	17-Oct-00	92	H	22.3					69.5				
272	VA	5	17-Jul-00	13-Mar-01	239	H	26.4					67.5				
273	VA	2	18-Jul-00	12-Oct-00	86	H	569.5	588.8	586.5	0.3		401.0	396.3	396.3	0.0	
273	VA	4	18-Jul-00	12-Oct-00	86	H	564.6					401.3				
273	VA	6	18-Jul-00	17-Oct-00	91	H	603.5					391.6				
273	VA	5	18-Jul-00	13-Mar-01	238	H	617.5					391.1				
274	VA	2	18-Jul-00	16-Oct-00	90	H	98.8	87.3	84.4	0.7		160.8	147.1	145.4	0.5	
274	VA	4	18-Jul-00	16-Oct-00	90	H	86.2					149.1				
274	VA	6	18-Jul-00	17-Oct-00	91	H	81.6					141.6				
274	VA	5	18-Jul-00	14-Mar-01	239	H	82.5					137.0				
275	VA	2	19-Jul-00	16-Oct-00	89	H	1.1	1.3	1.3	0.4		3.7	3.1	2.8	0.5	
275	VA	4	19-Jul-00	16-Oct-00	89	H	1.5					1.1				
275	VA	6	19-Jul-00	17-Oct-00	90	H	1.9					5.9				
275	VA	5	19-Jul-00	14-Mar-01	238	H	0.8					1.8				
276	VA	2	20-Jul-00	16-Oct-00	88	H	477.7	487.0	485.8	0.3		242.0	255.9	251.8	0.7	
276	VA	4	20-Jul-00	16-Oct-00	88	H	493.3					251.8				
276	VA	6	20-Jul-00	17-Oct-00	89	H	498.8					251.7				
276	VA	5	20-Jul-00	15-Mar-01	238	H	478.2					278.2				
277	VA	2	17-Jul-00	3-Oct-00	78	H	167.5	163.5	164.7	0.5		89.6	89.8	90.6	0.6	
277	VA	5	17-Jul-00	3-Oct-00	78	H	169.4					91.5				
277	VA	4	17-Jul-00	11-Oct-00	86	H	161.9					92.3				
277	VA	1	17-Jul-00	14-Mar-01	240	H	155.1					85.6				
278	VA	2	18-Jul-00	3-Oct-00	77	H	315.8	441.0	316.1	1.0	310.8	191.8	222.1	192.5	1.0	192.1
278	VA	5	18-Jul-00	3-Oct-00	77	H	316.3					191.2				
278	VA	6	18-Jul-00	11-Oct-00	85	H	300.3					193.2				
278	VA	4	18-Jul-00	13-Mar-01	238	H	831.7					312.0				
279	VA	2	25-Jul-00	16-Oct-00	83	H	251.3	253.1	255.1	0.5		109.7	110.8	110.2	0.6	
279	VA	4	25-Jul-00	16-Oct-00	83	H	258.9					110.7				
279	VA	6	25-Jul-00	17-Oct-00	84	H	270.0					113.8				
279	VA	5	25-Jul-00	15-Mar-01	233	H	232.3					109.0				
280	VA	2	25-Jul-00	16-Oct-00	83	H	210.4	208.1	212.5	0.8	213.6	104.2	103.6	103.8	0.5	
280	VA	4	25-Jul-00	16-Oct-00	83	H	215.8					106.4				
280	VA	6	25-Jul-00	17-Oct-00	84	H	214.6					103.3				
280	VA	5	25-Jul-00	15-Mar-01	233	H	191.7					100.5				
281	VA	2	26-Jul-00	16-Oct-00	82	H	646.8	649.3	650.9	0.5		302.7	303.8	302.2	0.7	
281	VA	4	26-Jul-00	17-Oct-00	83	H	633.0					311.2				
281	VA	6	26-Jul-00	17-Oct-00	83	H	654.9					301.6				
281	VA	5	26-Jul-00	15-Mar-01	232	H	662.4					299.7				
282	VA	2	15-Jul-00	3-Oct-00	80	H	158.4	136.0		0.7		96.1	88.2		0.5	
282	VA	5	15-Jul-00	12-Oct-00	89	H	117.8					80.1				
282	VA	3	15-Jul-00	13-Mar-01	241	H	131.9					88.5				
283	VA	2	15-Jul-00	4-Oct-00	81	H	145.2	125.0	119.2	0.9	118.2	86.5	81.8	83.2	0.7	
283	VA	4	15-Jul-00	4-Oct-00	81	H	116.2					82.5				
283	VA	5	15-Jul-00	12-Oct-00	89	H	118.4					74.2				
283	VA	3	15-Jul-00	13-Mar-01	241	H	120.0					83.9				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
284	VA	2	14-Jul-00	4-Oct-00	82	H	28.0	29.5	28.8	0.7		86.7	87.1	85.6	0.7	
284	VA	4	14-Jul-00	4-Oct-00	82	H	28.3					84.4				
284	VA	5	14-Jul-00	12-Oct-00	90	H	29.2					94.1				
284	VA	3	14-Jul-00	13-Mar-01	242	H	32.6					83.0				
285	VA	0	14-Jul-00	4-Oct-00	82	H	89.1	85.2	84.7	0.4		73.1	69.1	68.4	0.6	
285	VA	4	14-Jul-00	4-Oct-00	82	H	82.5					69.3				
285	VA	5	14-Jul-00	12-Oct-00	90	H	82.7					67.4				
285	VA	3	14-Jul-00	13-Mar-01	242	H	86.6					66.6				
286	NV	0	18-Aug-98	25-Feb-99	191	H	188.9	125.7	124.6	0.1		34.6	43.5	41.6	0.7	
286	NV	0	18-Aug-98	26-Feb-99	192	H	53.2					41.4				
286	NV	0	18-Aug-98	26-Feb-99	192	H	60.3					41.7				
286	NV		18-Aug-98	6-Apr-01	962	H	200.4					56.1				
287	NV	0	18-Aug-98	25-Feb-99	191	H	105.8	93.5				128.9	497.6	412.8	0.4	
287	NV	0	18-Aug-98	25-Feb-99	191	H	GCR					696.7				
287	NV	0	18-Aug-98	26-Feb-99	192	H	81.1					127.4				
287	NV		18-Aug-98	6-Apr-01	962	H	ERR					1037.2				
288	NV	0	18-Aug-98	25-Feb-99	191	L	74.5	48.6	43.4	0.6		28.7	28.1	27.7	0.5	
288	NV	0	18-Aug-98	25-Feb-99	191	L	48.1					26.6				
288	NV	0	18-Aug-98	26-Feb-99	192	L	33.0					24.9				
288	NV		18-Aug-98	6-Apr-01	962	L	38.7					32.2				
289	NV	0	20-Aug-98	25-Feb-99	189	H	4.5	9.9	6.0	0.9	5.5	415.3	408.7	408.1	0.3	
289	NV	0	20-Aug-98	25-Feb-99	189	H	6.6					391.2				
289	NV	0	20-Aug-98	26-Feb-99	190	H	5.4					427.4				
289	NV		20-Aug-98	6-Apr-01	960	H	23.2					400.9				
290	NV	0	19-Aug-98	25-Feb-99	190	H	301.5	198.6	164.4	0.3		21.8	87.6	22.2	0.9	26.7
290	NV	0	19-Aug-98	25-Feb-99	190	H	442.0					270.2				
290	NV	0	19-Aug-98	26-Feb-99	191	H	23.8					22.6				
290	NV		19-Aug-98	6-Apr-01	961	H	27.2					35.7				
291	NV	0	14-Jul-98	26-Feb-99	227	NA	9.9	15.6	14.5	0.4		8.7	15.3	12.5	0.7	
291	NV	0	14-Jul-98	26-Feb-99	227	NA	11.2					9.6				
291	NV	0	14-Jul-98	26-Feb-99	227	NA	17.7					15.3				
291	NV		14-Jul-98	6-Apr-01	997	NA	23.4					27.7				
292	NV	0	19-Aug-98	25-Feb-99	190	H	ERR					793.5	229.1	52.7	0.9	40.9
292	NV	0	19-Aug-98	25-Feb-99	190	H	370.0	145.6		0.8		18.4				
292	NV	0	19-Aug-98	26-Feb-99	191	H	65.4					86.9				
292	NV		19-Aug-98	6-Apr-01	961	H	1.4					17.5				
293	NV	0	19-Aug-98	25-Feb-99	190	H	24.9	23.7	24.8	0.7		28.6	29.4	29.9	0.5	
293	NV	0	19-Aug-98	25-Feb-99	190	H	27.3					31.1				
293	NV	0	19-Aug-98	26-Feb-99	191	H	17.7					25.2				
293	NV		19-Aug-98	6-Apr-01	961	H	24.7					32.6				
294	NV	0	18-Aug-98	25-Feb-99	191	H	56.7	105.8	54.9	1.0	53.5	216.8	212.2	212.2	0.4	
294	NV	0	18-Aug-98	25-Feb-99	191	H	53.0					207.6				
294	NV	0	18-Aug-98	26-Feb-99	192	H	50.8					195.5				
294	NV		18-Aug-98	6-Apr-01	962	H	262.5					229.0				
295	SC	2	17-Aug-99	15-Dec-99	120	H,M	GCR					392.4	355.8	360.0	0.4	
295	SC	4	17-Aug-99	15-Dec-99	120	H,M	GCR					341.8				
295	SC	5	17-Aug-99	15-Dec-99	120	H,M	GCR					311.0				
295	SC	3	17-Aug-99	20-Mar-01	581	H,M	GCR					378.1				
296	SC	2	16-Aug-99	15-Dec-99	121	H,M	GCR					1390.5	809.3	749.6	0.2	
296	SC	4	16-Aug-99	15-Dec-99	121	H,M	GCR					1133.2				
296	SC	5	16-Aug-99	15-Dec-99	121	H,M	GCR					365.9				
296	SC	1	16-Aug-99	20-Mar-01	582	H,M	GCR					347.6				
297	SC	2	10-Aug-99	15-Dec-99	127	L,M	ERR					75.6	75.2	74.6	0.5	
297	SC	4	10-Aug-99	15-Dec-99	127	L,M	1.8	2.1		0.7		71.8				
297	SC	5	10-Aug-99	15-Dec-99	127	L,M	3.1					79.7				
297	SC	3	10-Aug-99	20-Mar-01	588	L,M	1.3					73.6				
298	SC	2	11-Aug-99	15-Dec-99	126	H,M	558.2	237.6	173.5	0.5		131.6	106.0	110.7	0.5	
298	SC	4	11-Aug-99	15-Dec-99	126	H,M	290.8					118.0				
298	SC	5	1-Aug-99	15-Dec-99	136	H,M	45.0					71.0				
298	SC	3	11-Aug-99	20-Mar-01	587	H,M	56.2					103.4				
299	WI	2	15-Jul-98	6-Apr-99	265	NA	75.1	77.8	78.4	0.5		52.8	53.6	53.5	0.4	
299	WI	4	15-Jul-98	6-Apr-99	265	NA	77.4					54.2				
299	WI	5	15-Jul-98	7-Apr-99	266	NA	79.3					50.1				
299	WI	3	15-Jul-98	19-Mar-01	978	NA	79.4					57.2				
300	WI	2	2-Jul-98	1-Apr-99	273	NA	146.2	143.5	143.6	0.3		111.9	114.4	113.3	0.6	
300	WI	4	2-Jul-98	1-Apr-99	273	NA	140.9					109.4				
300	WI	5	2-Jul-98	1-Apr-99	273	NA	148.9					114.6				
300	WI	3	2-Jul-98	16-Mar-01	988	NA	137.9					121.5				
301	WI	2	2-Jul-98	30-Mar-99	271	NA	GCR					612.5	601.2	600.2	0.5	
301	WI	4	2-Jul-98	30-Mar-99	271	NA	GCR					601.7				
301	WI	5	2-Jul-98	1-Apr-99	273	NA	GCR					592.1				
301	WI	3	2-Jul-98	16-Mar-01	988	NA	GCR					598.6				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
302	WI	2	15-Jul-98	6-Apr-99	265	NA	125.2	126.4	125.4	0.8	125.1	75.4	77.9	76.6	0.8	76.2
302	WI	4	15-Jul-98	6-Apr-99	265	NA	124.5					76.3				
302	WI	5	15-Jul-98	7-Apr-99	266	NA	130.4					76.8				
302	WI	3	15-Jul-98	19-Mar-01	978	NA	125.6					82.9				
303	WI	5	6-Sep-98	1-Apr-99	207	NA	291.9	287.9	291.1	0.9	291.4	260.2	273.1	265.0	0.8	263.4
303	WI	2	16-Jun-98	30-Mar-99	287	NA	291.9					262.8				
303	WI	4	16-Jun-98	30-Mar-99	287	NA	290.3					302.0				
303	WI	3	16-Jun-98	16-Mar-01	1004	NA	277.4					267.2				
304	WI	2	1-Jul-98	30-Mar-99	272	NA	309.1	309.3	312.1	0.6		404.4	399.1	398.7	0.3	
304	WI	4	1-Jul-98	30-Mar-99	272	NA	322.9					412.6				
304	WI	5	2-Jul-98	1-Apr-99	273	NA	315.1					392.9				
304	WI	3	2-Jul-98	16-Mar-01	988	NA	290.0					386.4				
305	WI	2	1-Jul-98	29-Mar-99	271	NA	340.7	332.1	335.9	0.6		259.4	265.1	264.2	0.4	
305	WI	3	1-Jul-98	29-Mar-99	271	NA	340.9					269.0				
305	WI	5	1-Jul-98	1-Apr-99	274	NA	331.1					250.2				
305	WI	1	1-Jul-98	16-Mar-01	989	NA	315.8					281.6				
306	WI	2	15-Jul-98	6-Apr-99	265	NA	136.6	137.4	136.9	0.6		72.4	74.4	72.1	0.8	71.1
306	WI	3	15-Jul-98	6-Apr-99	265	NA	137.2					71.8				
306	WI	5	15-Jul-98	7-Apr-99	266	NA	140.2					69.1				
306	WI	1	15-Jul-98	19-Mar-01	978	NA	135.4					84.3				
307	WI	2	1-Jul-98	29-Mar-99	271	NA	388.0	371.3	372.6	0.5		267.0	242.2	234.6	0.9	233.9
307	WI	4	1-Jul-98	29-Mar-99	271	NA	375.6					235.9				
307	WI	5	1-Jul-98	1-Apr-99	274	NA	369.5					233.3				
307	WI	1	1-Jul-98	16-Mar-01	989	NA	352.1					232.6				
308	WI	2	16-Jul-98	6-Apr-99	264	NA	146.8	144.5	145.9	0.7		85.4	83.0	83.9	0.6	
308	WI	4	16-Jul-98	6-Apr-99	264	NA	144.9					85.1				
308	WI	5	16-Jul-98	7-Apr-99	265	NA	148.0					82.6				
308	WI	3	16-Jul-98	19-Mar-01	977	NA	138.2					79.0				
309	WI	2	17-Jun-98	30-Mar-99	286	NA	203.5	220.6	203.4	0.9	201.7	174.4	184.0	170.7	0.8	165.9
309	WI	4	17-Jun-98	30-Mar-99	286	NA	203.2					167.0				
309	WI	5	17-Jun-98	1-Apr-99	288	NA	198.5					156.3				
309	WI	3	17-Jun-98	16-Mar-01	1003	NA	277.0					238.4				
310	WI	2	6-Jul-98	29-Mar-99	266	NA	146.6	141.3	141.6	0.3		107.5	116.5	111.7	0.6	
310	WI	4	6-Jul-98	29-Mar-99	266	NA	135.6					102.9				
310	WI	3	17-Jun-98	1-Apr-99	288	NA	139.4					115.9				
310	WI	1	6-Jul-98	16-Mar-01	984	NA	143.7					139.8				
311	WI	2	17-Jun-98	29-Mar-99	285	H	133.1	130.0	130.9	0.6		84.7	85.7	84.9	0.8	84.7
311	WI	4	17-Jun-98	29-Mar-99	285	H	131.8					85.1				
311	WI	5	17-Jun-98	1-Apr-99	288	H	130.0					84.4				
311	WI	3	17-Jun-98	16-Mar-01	1003	H	125.2					88.7				
312	WI	2	16-Jul-98	6-Apr-99	264	NA	605.3	617.3	610.5	0.7		295.9	294.5	294.9	0.5	
312	WI	4	16-Jul-98	6-Apr-99	264	NA	599.6					289.7				
312	WI	5	16-Jul-98	7-Apr-99	265	NA	615.6					293.8				
312	WI	1	16-Jul-98	16-Mar-01	974	NA	648.8					298.5				
313	WI	2	17-Jun-98	29-Mar-99	285	NA	38.5	38.3	38.3	0.4		85.8	84.7	84.7	0.2	
313	WI	4	17-Jun-98	29-Mar-99	285	NA	38.0					83.6				
313	WI	5	17-Jun-98	1-Apr-99	288	NA	37.8					84.1				
313	WI	3	17-Jun-98	16-Mar-01	1003	NA	38.9					85.3				
314	WI	2	18-Aug-98	30-Mar-99	224	NA	372.1	373.5	372.8	0.7		679.2	680.7	681.5	0.5	
314	WI	4	18-Jun-98	30-Mar-99	285	NA	376.9					683.7				
314	WI	5	16-Jun-98	1-Apr-99	289	NA	373.4					654.4				
314	WI	3	18-Jun-98	16-Mar-01	1002	NA	371.7					705.5				
315	WI	2	18-Jun-98	30-Mar-99	285	NA	364.9	333.3	327.9	0.6		368.2	351.7	346.6	0.9	346.2
315	WI	4	18-Jun-98	30-Mar-99	285	NA	323.6					346.7				
315	WI	5	18-Jun-98	1-Apr-99	287	NA	312.4					345.5				
315	WI	3	18-Jun-98	16-Mar-01	1002	NA	332.2					346.4				
316	WI	2	6-Jul-98	5-Apr-99	273	NA	31.5	30.8	30.8	0.3		43.9	41.3	41.4	0.6	
316	WI	4	6-Jul-98	5-Apr-99	273	NA	30.0					41.5				
316	WI	5	6-Jul-98	6-Apr-99	274	NA	29.2					38.3				
316	WI	3	6-Jul-98	16-Mar-01	984	NA	32.3					41.3				
317	WI	2	22-Jun-98	5-Apr-99	287	NA	33.1	33.9	33.1	0.9	33.0	24.3	26.0	25.6	0.7	
317	WI	4	22-Jun-98	5-Apr-99	287	NA	33.1					25.5				
317	WI	5	22-Jun-98	7-Apr-99	289	NA	32.8					25.7				
317	WI	3	27-Jun-98	19-Mar-01	996	NA	36.4					28.6				
318	WI	2	23-Jun-98	5-Apr-99	286	NA	50.0	50.9	50.4	0.7		32.2	35.3	35.5	0.5	
318	WI	4	23-Jun-98	6-Apr-99	287	NA	49.5					37.9				
318	WI	5	23-Jun-98	7-Apr-99	288	NA	50.7					35.0				
318	WI	3	23-Jun-98	19-Mar-01	1000	NA	53.5					35.9				
319	WI	2	25-Jun-98	5-Apr-99	284	NA	133.9	130.0	129.7	0.2		437.1	426.0	424.4	0.6	
319	WI	5	25-Jun-98	5-Apr-99	284	NA	127.2					418.2				
319	WI	5	25-Jun-98	7-Apr-99	286	NA	132.2					426.6				
319	WI	3	25-Jun-98	19-Mar-01	998	NA	126.7					422.2				
320	WI	2	19-Jun-98	5-Apr-99	290	NA	136.1	135.2	135.2	0.4		470.8	477.1	475.0	0.6	
320	WI	4	19-Jun-98	5-Apr-99	290	NA	138.4					477.4				
320	WI	5	19-Jun-98	6-Apr-99	291	NA	134.3					472.5				
320	WI	3	29-Jun-98	16-Mar-01	991	NA	132.0					487.7				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
321	WI	2	29-Jun-98	5-Apr-99	280	NA	148.5	145.0	145.5	0.3		155.0	155.3	154.3	0.6	
321	WI	4	29-Jun-98	5-Apr-99	280	NA	148.1					153.6				
321	WI	5	29-Jun-98	6-Apr-99	281	NA	142.9					152.0				
321	WI	3	29-Jun-98	16-Mar-01	991	NA	140.6					160.4				
322	NJ	2	16-Dec-97	1-Jun-98	167	H	529.4	539.9	531.0	0.9	529.6	601.5	603.5	607.6	0.6	
322	NJ	4	16-Dec-97	2-Jun-98	168	H	532.6					579.6				
322	NJ	6	16-Dec-97	4-Jun-98	170	H	526.8					613.6				
322	NJ	3	16-Dec-97	26-Mar-01	1196	H	570.8					619.4				
323	NJ	2	9-Dec-97	3-Jun-98	176	L,M	984.2	970.4	977.3	0.6		1001.6	948.5	977.8	0.6	
323	NJ	4	9-Dec-97	3-Jun-98	176	L,M	999.3					954.0				
323	NJ	6	9-Dec-97	5-Jun-98	178	L,M	970.3					1062.5				
323	NJ	1	9-Dec-99	26-Mar-01	473	L,M	927.9					776.0				
324	NJ	5	27-Jan-98	9-Jun-98	133	H	696.1	684.3	674.5	0.5		373.3	367.1	364.8	0.4	
324	NJ	2	27-Jan-98	10-Jun-98	134	H	652.0					355.0				
324	NJ	4	27-Jan-98	10-Jun-98	134	H	652.8					356.2				
324	NJ	3	27-Jan-98	26-Mar-01	1154	H	736.1					383.7				
325	NV	3	27-Jul-00	26-Oct-00	91	NA	8.1	8.9	8.8	0.5		39.9	39.3	39.1	0.4	
325	NV	2	27-Jul-00	27-Oct-00	92	NA	9.8					37.0				
325	NV	4	27-Jul-00	27-Oct-00	92	NA	8.7					38.2				
325	NV	1	27-Jul-00	26-Mar-01	242	NA	8.9					41.9				
326	NV	2	17-Aug-00	26-Oct-00	70	NA	23.7	25.3	24.0	0.9	23.8	36.5	42.9	36.2	0.9	35.0
326	NV	3	17-Aug-00	26-Oct-00	70	NA	23.5					35.8				
326	NV	5	17-Aug-00	27-Oct-00	71	NA	24.3					32.8				
326	NV	1	17-Aug-00	26-Mar-01	221	NA	29.7					66.3				
327	NV	5	28-May-00	26-Oct-00	151	NA	27.8	28.9	28.6	0.7		37.9	38.9	38.3	0.7	
327	NV		28-May-00	27-Oct-00	152	NA	28.4					37.8				
327	NV	2	28-May-00	27-Oct-00	152	NA	28.7					41.2				
327	NV	0	25-May-00	26-Mar-01	305	NA	30.6					38.7				
328	NV	5	5-Jun-00	26-Oct-00	143	NA	30.2	32.1	32.5	0.5		31.9	32.2	33.0	0.6	
328	NV	2	5-Jun-00	27-Oct-00	144	NA	33.2					34.3				
328	NV	4	5-Jun-00	27-Oct-00	144	NA	31.8					28.3				
328	NV	3	5-Jun-00	26-Mar-01	294	NA	33.2					34.1				
329	NV	5	12-Jul-00	26-Oct-00	106	NA	17.2	17.8	17.1	0.8	16.9	10.9	10.5	10.9	1.0	10.9
329	NV	3	12-Jul-00	27-Oct-00	107	NA	16.9					10.9				
329	NV	4	12-Jul-00	27-Oct-00	107	NA	16.6					9.0				
329	NV	1	12-Jul-00	26-Mar-01	257	NA	20.4					11.0				
330	NV	2	7-Aug-00	26-Oct-00	80	H	23.1	24.7	25.5	0.4		15.6	17.2	16.3	0.6	
330	NV	3	7-Aug-00	26-Oct-00	80	H	28.5					17.0				
330	NV	4	7-Aug-00	27-Oct-00	81	H	27.9					22.0				
330	NV	1	7-Aug-00	26-Mar-01	231	H	19.2					14.3				
331	NE	2	30-Nov-98	4-Mar-99	94	H	67.2	67.3	66.8	0.6		39.8	39.9	39.9	0.4	
331	NE	4	30-Nov-98	4-Mar-99	94	H	65.6					39.4				
331	NE	5	30-Nov-98	5-Mar-99	95	H	66.4					40.3				
331	NE	3	1-Sep-98	12-Apr-01	954	H	69.8					40.0				
332	NE	2	1-Sep-98	4-Mar-99	184	H	348.9	349.0	348.9	0.5		165.4	169.0	168.9	0.3	
332	NE	4	1-Sep-98	4-Mar-99	184	H	348.9					167.3				
332	NE	5	1-Sep-98	5-Mar-99	185	H	358.8					172.7				
332	NE	3	1-Sep-98	12-Apr-01	954	H	339.3					170.5				
333	NE	2	1-Sep-98	4-Mar-99	184	L	470.9	469.9	470.4	0.5		274.6	282.5	282.4	0.2	
333	NE	4	1-Sep-98	5-Mar-99	185	L	464.1					290.1				
333	NE	5	1-Sep-98	5-Mar-99	185	L	474.6					293.3				
333	NE	3	1-Sep-98	12-Apr-01	954	L	469.8					272.1				
334	NE	2	1-Sep-98	4-Mar-99	184	L	59.6	59.0	58.6	0.5		159.3	163.3	162.5	0.4	
334	NE	4	1-Sep-98	4-Mar-99	184	L	57.5					158.1				
334	NE	5	1-Sep-98	5-Mar-99	185	L	62.7					170.2				
334	NE	3	1-Sep-98	12-Apr-01	954	L	56.0					165.7				
335	NE	2	1-Sep-98	5-Mar-99	185	L	489.1	495.6	491.4	0.8	490.6	259.2	251.3	249.8	0.6	
335	NE	4	1-Sep-98	5-Mar-99	185	L	493.1					251.8				
335	NE	5	1-Sep-98	9-Mar-99	189	L	489.7					247.8				
335	NE	3	1-Sep-98	12-Apr-01	954	L	510.3					246.4				
336	NE	2	31-Aug-98	5-Mar-99	186	L	302.9	294.1	300.1	0.9	301.0	190.4	190.7	186.8	0.6	
336	NE	4	31-Aug-98	5-Mar-99	186	L	300.6					183.2				
336	NE	5	31-Aug-98	9-Mar-99	190	L	299.6					176.0				
336	NE	3	31-Aug-98	12-Apr-01	955	L	273.1					213.0				
337	NE	2	31-Aug-98	5-Mar-99	186	L	503.2	502.9	503.6	0.5		246.7	246.9	245.3	0.5	
337	NE	4	31-Aug-98	5-Mar-99	186	L	503.9					243.8				
337	NE	5	31-Aug-98	9-Mar-99	190	L	490.4					216.7				
337	NE	3	31-Aug-98	12-Apr-01	955	L	514.1					280.2				
338	NE	2	31-Aug-98	5-Mar-99	186	L	533.4	532.8	533.1	0.5		276.7	276.4	274.3	0.5	
338	NE	4	31-Aug-98	5-Mar-99	186	L	532.7					271.8				
338	NE	1	31-Aug-98	9-Mar-99	190	L	515.0					259.5				
338	NE	3	31-Aug-98	12-Apr-01	955	L	550.0					297.4				
339	MA	5	16-Sep-98	11-Jan-99	117	NA	94.2	97.9	96.9	0.5		89.3	94.7	92.8	0.7	
339	MA	2	16-Sep-98	11-Jan-99	117	NA	90.5					91.9				
339	MA	4	16-Sep-98	11-Jan-99	117	NA	107.3					93.7				
339	MA	3	16-Sep-98	26-Mar-01	922	NA	99.6					103.9				

Table 1. Summary of site, laboratory, geochemical, and chlorofluorocarbon data (*continued*)

		Ampoule	Sampling	Analysis	Storage	Geochemical	CFC-11	Average	Median		New Average		Average	Median		New Average
Site	State	Number	Date	Date	in Days	Code	pg/kg	pg/kg	pg/kg	Q	pg/kg	pg/kg	pg/kg	pg/kg	Q	pg/kg
340	MA	2	15-Sep-98	11-Jan-99	118	NA	391.8	398.1	394.3	0.7		154.3	163.1	159.9	0.6	
340	MA	4	15-Sep-98	11-Jan-99	118	NA	396.7					155.2				
340	MA	5	15-Sep-98	11-Jan-99	118	NA	387.8					164.5				
340	MA	1	15-Sep-98	26-Mar-01	923	NA	416.1					178.3				
341	MA	2	15-Sep-98	11-Jan-99	118	NA	1.3	1.2	1.2	0.4		0.0	0.3	0.0	1.0	0.0
341	MA	4	15-Sep-98	11-Jan-99	118	NA	1.1					0.0				
341	MA	5	15-Sep-98	11-Jan-99	118	NA	0.8					0.0				
341	MA	3	15-Sep-98	26-Mar-01	923	NA	1.5					1.2				
342	CO	2	17-Nov-98	13-Apr-99	147	NA	141.2	142.6	142.0	0.5		75.1	75.4	75.4	0.5	
342	CO	4	17-Nov-98	13-Apr-99	147	NA	142.8					75.7				
342	CO	5	17-Nov-98	14-Apr-99	148	NA	148.1					77.9				
342	CO	3	13-Nov-98	20-Mar-01	858	NA	138.3					72.8				
343	CO	2	24-Nov-98	12-Apr-99	139	L	4.7	10.0	7.1	0.8	6.3	21.7	28.6	25.1	0.7	
343	CO	4	24-Nov-98	12-Apr-99	139	L	6.5					21.2				
343	CO	5	24-Nov-98	13-Apr-99	140	L	21.2					43.2				
343	CO	3	24-Nov-98	20-Mar-01	847	L	7.6					28.4				
344	CO	2	19-Nov-98	12-Apr-99	144	L	284.0	276.7	277.4	0.3		188.8	191.2	190.1	0.6	
344	CO	4	19-Nov-98	12-Apr-99	144	L	289.2					199.4				
344	CO	5	19-Nov-98	13-Apr-99	145	L	270.8					185.0				
344	CO	3	19-Nov-98	20-Mar-01	852	L	262.7					191.4				
345	CO	2	18-Nov-98	12-Apr-99	145	H	82.8	84.0	83.1	0.7		85.1	83.9	84.0	0.3	
345	CO	5	18-Nov-98	12-Apr-99	145	H	87.9					86.2				
345	CO	4	18-Nov-98	14-Apr-99	147	H	81.7					82.8				
345	CO	3	18-Nov-98	20-Mar-01	853	H	83.4					81.6				
346	CO	2	18-Nov-98	13-Apr-99	146	L	54.2	62.9	64.4	0.5		39.8	42.7	42.1	0.5	
346	CO	4	18-Nov-98	13-Apr-99	146	L	61.4					40.9				
346	CO	5	18-Nov-98	14-Apr-99	147	L	67.4					46.8				
346	CO	3	18-Nov-98	20-Mar-01	853	L	68.5					43.3				
347	CO	2	17-Nov-98	13-Apr-99	147	H	307.2	355.6	361.9	0.5		208.7	229.7	232.2	0.5	
347	CO	3	17-Nov-98	13-Apr-99	147	H	376.4					235.6				
347	CO	5	17-Nov-98	14-Apr-99	148	H	391.3					245.7				
347	CO	1	17-Nov-98	20-Mar-01	854	H	347.3					228.8				
348	VA	2	15-Jul-98	3-Nov-98	111	H	495.7	509.6	503.6	0.7		493.2	500.8	499.1	0.6	
348	VA	4	15-Jul-98	3-Nov-98	111	H	509.4					501.2				
348	VA	6	15-Jul-98	30-Nov-98	138	H	497.7					497.0				
348	VA	3	15-Jul-98	25-Jul-00	741	H	535.4					511.9				
349	VA	2	16-Aug-99	15-Oct-99	60	H	364.8	369.8	367.4	0.6		157.0	159.4	157.7	0.8	157.1
349	VA	4	16-Aug-99	15-Oct-99	60	H	364.1					155.9				
349	VA	5	16-Aug-99	3-Nov-99	79	H	369.9					158.4				
349	VA	1	16-Aug-99	25-Jul-00	344	H	380.5					166.3				
350	FL	2	10-Sep-97	6-Apr-98	208	M	0.0	0.0	0.0	0.0		28.8	32.3	28.4	0.9	27.7
350	FL	4	10-Sep-97	6-Apr-98	208	M	0.0					27.9				
350	FL	6	10-Sep-97	7-Apr-98	209	M	0.0					26.5				
350	FL	1	10-Sep-97	25-Jul-00	1049	M	0.0					45.8				
351	FL	2	15-Sep-97	6-Apr-98	203	M	0.0	0.0	0.0	0.0		74.1	47.0	54.1	0.4	
351	FL	4	15-Sep-97	6-Apr-98	203	M	0.0					0.0				
351	FL	6	15-Sep-97	7-Apr-98	204	M	0.0					34.1				
351	FL	1	15-Sep-97	25-Jul-00	1044	M	0.0					79.7				
352	NJ	2	10-Dec-97	2-Jun-98	174	L,M	974.4	974.7		0.5		748.3	734.8	736.7	0.4	
352	NJ	4	10-Dec-97	2-Jun-98	174	L,M	989.5					639.4				
352	NJ	5	10-Dec-97	5-Jun-98	177	L,M	960.3					725.0				
352	NJ	1	10-Dec-97	25-Jul-00	958	L,M	GCR					826.5				
353	NJ	5	27-Jan-98	9-Jun-98	133	H	GCR					310.5	310.2	307.8	0.6	
353	NJ	2	27-Jan-98	10-Jun-98	134	H	GCR					301.0				
353	NJ	4	27-Jan-98	10-Jun-98	134	H	GCR					305.1				
353	NJ	3	27-Jan-98	25-Jul-00	910	H	GCR					324.2				
354	VA	3	29-Jun-99	4-Aug-99	36	L,M	4.7	6.2		0.6		98.9	103.4		0.6	100.8
354	VA	2	29-Jun-99	28-Oct-99	121	L,M	8.0					103.7				
354	VA	4	29-Jun-99	29-Oct-99	122	L,M	5.8					97.9				
354	VA	6	29-Jun-99	1-Nov-99	125	L,M	9.1					113.8				
354	VA	1	29-Jun-99	25-Jul-00	392	L,M	3.3					102.7				
355	VA	2	30-Jun-99	28-Oct-99	120	L	46.7	41.6	41.8	0.3		205.0	179.9	175.0	0.6	
355	VA	4	30-Jun-99	29-Oct-99	121	L	39.5					170.1				
355	VA	6	30-Jun-99	1-Nov-99	124	L	36.0					164.7				
355	VA	1	30-Jun-99	25-Jul-00	391	L	44.0					179.8				
356	VA	2	19-Oct-99	9-Feb-00	113	L,M	20.9	19.0	18.8	0.4		1492.1	1475.6	1464.2	0.5	
356	VA	4	19-Oct-99	9-Feb-00	113	L,M	18.1					1436.2				
356	VA	6	19-Oct-99	10-Feb-00	114	L,M	17.4					1374.7				
356	VA	1	19-Oct-99	25-Jul-00	280	L,M	19.4					1599.4				

End of Table 1

Table 2. Examples of sites that exhibited either variability in CFC concentrations over the sampling period, or purging trends in the CFC concentrations over the sampling period.

VARIABLE				PURGING			
Site	Ampoule Number	Storage Time in Days	CFC-11 pg/kg	Site	Ampoule Number	Storage Time in Days	CFC-11 pg/kg
120	2	85	157.1	178	2	127	12.2
120	3	185	389.3	178	3	1386	25.2
120	4	157	12.7	178	4	127	55.2
120	5	157	13.5	178	5	131	86.7

Site	Ampoule Number	Storage Time in Days	CFC-12 pg/kg	Site	Ampoule Number	Storage Time in Days	CFC-12 pg/kg
84	2	189	21.9	134	2	127	439.5
84	3	193	41.6	134	3	247	390.4
84	4	188	10.2	134	4	198	332.1
84	5	193	18.7	134	5	198	335.6
120	2	85	148.7	176	2	147	135.1
120	3	185	251	176	3	1427	137.9
120	4	157	7	176	4	147	146.2
120	5	157	7.7	176	5	161	150.9
159	2	12	927.2	182	1	131	80.8
159	3	160	812.3	182	2	155	91.5
159	4	12	890	182	3	1421	95.6
159	7	148	776.3	182	4	155	118
179	1	1443	112.3	182	5	161	129.5
179	3	10	103				
179	5	10	71.6				
179	6	10	35.9				
179	7	10	73.1				
296	1	582	347.6				
296	2	121	1390.5				
296	4	121	1133.2				
296	5	121	365.9				
351	1	1044	79.7				
351	2	203	74.1				
351	4	203	0				
351	6	204	34.1				

Conclusions

The U.S. Geological Survey (USGS) Chlorofluorocarbon (CFC) Laboratory in Reston, Va., has been measuring concentrations of CFCs in ground-water samples since 1989 to estimate the year that a water sample was recharged to a ground-water flow system. The water samples have been collected in flame-sealed borosilicate ampoules. Typically for each site, three samples were analyzed within days to a few months after collection, and additional samples were archived for extended periods of time (up to four years). The stability of the CFC concentrations in archived water samples from the USGS CFC Laboratory was investigated by analyzing the CFC concentrations in archived water samples collected in flame-sealed borosilicate ampoules and comparing the analyses with those that were obtained soon after sample collection. For CFC-11 and CFC-12, approximately 14% and 10.5%, respectively, of the archived samples were statistically different (both higher and lower) than the concentrations

from analyses conducted soon after the sample collection. The extraneous values, however, were primarily related to natural variability of CFC concentrations in the water rather than to microbial degradation. For both CFC-11 and CFC-12, in a majority of the archived samples that failed the Q-test, the concentrations in the archived sample were higher (rather than lower if degradation were occurring) than the concentrations in the original analyses.

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